

**'MANAGING INSTITUTIONAL CHANGE:
ARCHITECTURAL TECHNOLOGY AS A PROFESSION IN SOCIETY'**

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BA (Hons) Dip Arch MArch PGCert.

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**A thesis submitted in partial fulfilment of the requirements of the University
of Wolverhampton for the degree of Doctor of Philosophy (PhD)**

October 2019

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ABSTRACT

This study sets out to explore the need for institutional change management within the setting of a professional body: the Chartered Institute of Architectural Technologists – CIAT. Even though research has established that there are successful models and processes designed to depict the dynamics of organisational change, these tend to be generalised and nothing specific to professional body institutions. Professional bodies are coming under increasing pressure to maintain their utilitarian values in the face of changing technology, legislation and sustainability issues. Therefore the need to redefine the traditional role of the CIAT as a '*not-for-profit*' organisations demanded understanding on how the membership perceived its relevance in its current form. This intention was balanced by evaluating the existential models on management change, primarily, to bring about a positive change and to improve the viability of CIAT to its broader membership. A stratified sample frame of least 1280 members was identified based on simple randomisation of respondents according to the designated membership level; this constituted 320 Chartered Technologists; 160 Technicians; 160 Honorary and 240 students. The first set of data analysed enabled the study to extrapolate exogeneity drivers, which reflected the desire for increased loyalty through sustained membership subscription. Analogous to this was the call for CIAT to focus on the initiatives aimed at widening membership beyond the traditional routes, by capturing new emerging fields such as BIM-design and to further attract individuals from other professions seeking to belong to more than one professional body.

Endogeneity drivers were also identified as driven by initiatives more likely to promote the reputation of the institution. Chief among these was the revelation of the broad membership's desiring to feel embraced more as ambassadors of the institution and as such, deserving more access to all the brands of design-services which CIAT seeks to promote. However, for these calls to bear fruits, CIAT needed to take a new ambidextrous structure by adopting initiatives

targeting support for small to medium design outfits. These are continually seeking affordable access to design licensing tools. However, using non-parametric methods for the analysis of variance revealed that respondents who supply architectural services and those who run their design practices have this same shared expectation. In essence, they define value-desirability for their membership through sustained loyalty to CIAT only because membership enables them to retain a competitive edge, and are readily recognised among industry-relevant-clients. In the light of this, CIAT must foster initiatives that increase its relevance and international reputation as well as diversify more the services on offer to its membership while keeping an eye on existential factors of adopting a business-like model. As a professional body, CIAT needs to retain its obligations as a ‘not-for-profit’ organisation with a responsibility to its members and the public. These areas emerged as existential areas likely to be in the way of a successful institutional change. In order for change to succeed, understanding the sources which might offer some resistance to change remains critical. Correspondingly, the focus for improving the value-desirability factors that can inspire new entrants, hinges on strengthening the international reputation of the institution and above all the simplification of the progression routes to chartered membership. A conceptual framework that embodies the process of change for CIAT is presented. The limitation of the study is that the results are based on UK membership only. The study also recommends that to achieve the desired change management, recognition of packages for SMEs design outfits will improve the value-desirability perception, most memberships seek in their professional body.

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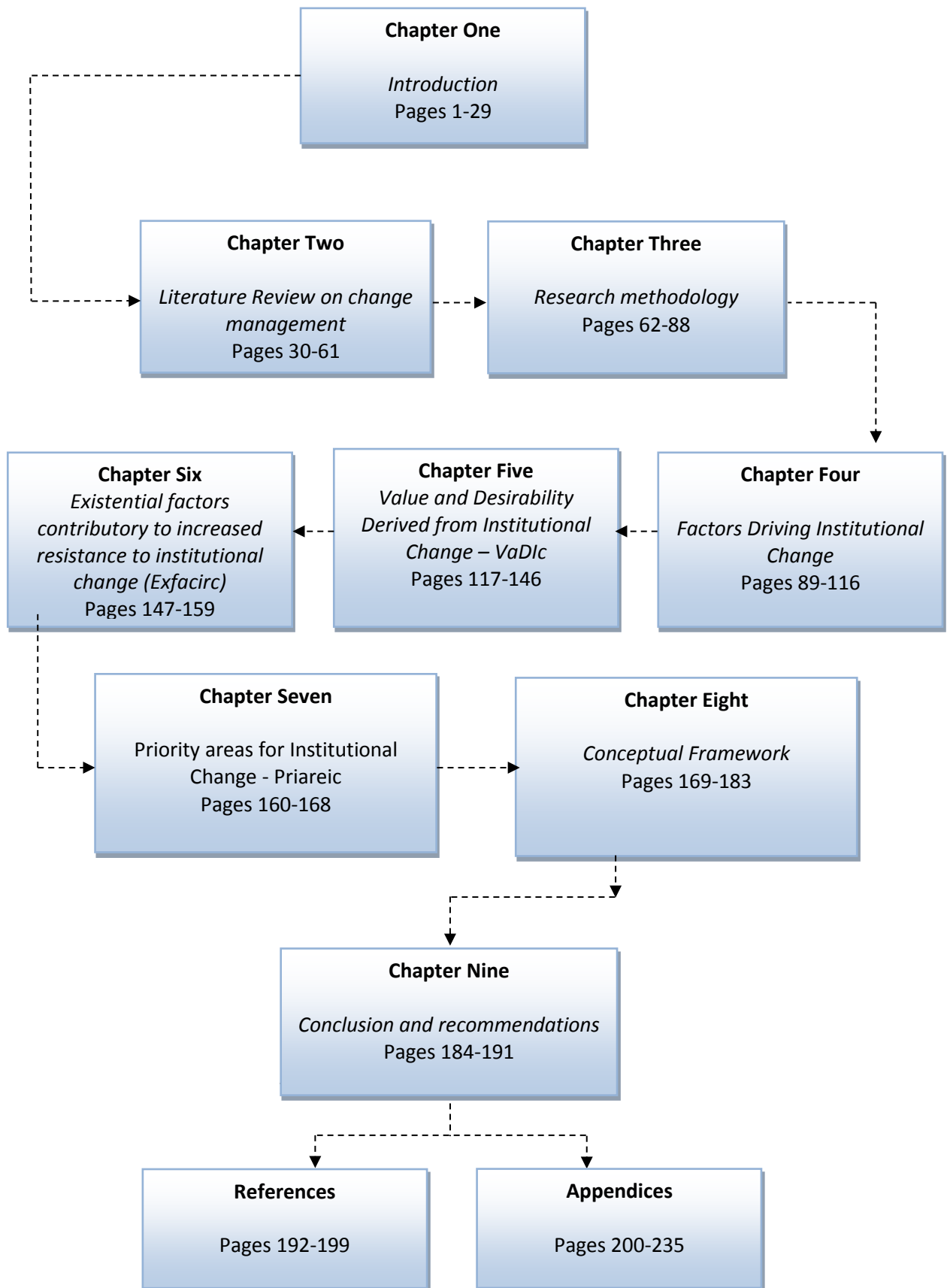
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Research content map



KEY TO ABBREVIATIONS

| | |
|----------------|--|
| ANOVA | Analysis of Variance |
| BIM | Building Information Modelling |
| CIAT | Chartered Institute of Architectural Technologists |
| CIOB | Chartered Institute of Building |
| CPD | Continuous Professional Development |
| EXOGENOUS | Factors external to an institution impacting on its effectiveness |
| ENDOGENOUS | Factors internal to an institution impacting on its effectiveness |
| ExEndof: | Existential Endogenous factors (readily identified internal factors unique to an organisation) |
| ExExof: | Existential Exogenous factors (readily identified external factors unique to an organisation) |
| Exfacirc: | Existential factors contributory to increased resistance to institutional change |
| FaDic: | Factors driving institutional change - |
| H ₀ | Null Hypothesis |
| H ₁ | Alternative Hypothesis |
| InSexp | Institutional-subjectivity-exposure |
| IV | Independent Variables |
| DV | Dependent Variables |
| ONS | Office of National Statistics |
| Priareic | Priority areas for Institutional Change - |
| PROPHYLACTIC | Strategies, measures tending to prevent ineffectiveness of change management. |
| PROPROSTAGS | Prophylactic project strategies – instruments to effect change |
| RIBA | Royal Institute of British Architects |
| RICS | Royal Institution of Chartered Surveyors |
| VaDIc | Value and desirability derived from institutional change |

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DEDICATION

This work is dedicated to my wife and my daughters for their patience, understanding and invaluable support throughout the years.

CHAPTER ONE

Introduction

1.1 Introduction

The focus of this study was to explore the need for institutional change management within the setting of a professional body: The Chartered Institute of Architectural Technologists – CIAT. Even though research has established there are successful models and processes designed to depict the dynamics of organisational change, these tend to be generalised to any organisation and nothing specific to professional body institutions. Throughout this study, the generic models on change management formed the critical mass of the body of literature, and from these, constructs have been adopted to project the institutional change management ethos analogous to a professional body organisation such as CIAT.

The research was therefore set to objectively examine the origins of the driving factors for change focusing on the aspirations and challenges set by CIAT. Effectively the concept of gaining inside knowledge acquired from working within brings its own benefits. The inside perspective is the presentation of the view from within, which Wong, Musa and Wong (2011) refer to as a surgeon's perspective or viewpoint. This view, while intuitively factual, it is, according to Turner (2017) flout with concentric norms that are only informed and abound within the boundaries of a subjects' organisation. Given this standpoint, it was critical to remove oneself from being trapped in 'subjectiveness' and to seek existing knowledge from outside. Therefore cautious of the need to mitigate the effect of being engrossed in *institutional-subjectivity-exposure* hereafter referred to as *InSexp*, from the very outset, the

literature on the epistemology of organisation change management was critical.

Given the aforesaid, the study noted the need to define the challenges observed from ‘within’ and also from ‘outside’ of the CIAT organisation as essential to understanding the precise converging point at which comparisons can be natured which would truly impact and inform the extent to which institutional change management can be affected. Models that are generated by the existential take the surgical view. The focus of this study was to identify existential factors or drivers for institutional change management from within (and in the context of this study, these are idealised as internal or endogenous factors). Nevertheless, to be wholly complete, the net needed to be cast by seeking other examples of factors from outside the institutional set up (thus external or exogenous factors). The extent to which these factors can be reconciled and perceived to benefit the broad membership of the Institute of CIAT was the ultimate go for this study.

Despite institutional bodies facing congruent demands for change and need to meet the ever-changing global needs of the broader membership, literature is insidious about the challenges these ‘*not-for-profit*’ making organisations face. With this in mind, the focal point for the study was to explore CIAT’s relevance in its current form to the broad membership and therefore society at large and to balance this focus by evaluating the existential models on management change.

1.2 Background to the study

The quest for change in any organisation is organic and occurs intrinsically of the demands placed upon the organisation and in the case of this study, CIAT as a professional institution. When a call for change is made, it is not untypical for the management of the organisation seeking change to enlist specialist entities to assist in the process of change Bevan, (2011);

Campbell, (2014). Those engaged to oversee the change often have to adopt some form of change management models to guide their planned process of change management (Al-Haddad, and Kotnour, (2015); Alversson and Sveningsson, (2016). Yet still, one of the objective for institutional change includes the desire to bring about a positive change and other benefits intended to improve the viability of the organisation for the benefits of the shareholders Bevan, (2011), the broader membership Al-Haddad, and Kotnour, (2015) and to the society at large Burnes, (2004). The purpose of this chapter, therefore, is to give an overview of the study as well as to present the statement of the problem leading to the need for research, an overview of the rationale for institutional change management relating to the Chartered Institute of Architectural Technologists – through the thesis abbreviated as CIAT. It offers the research aim and objectives, research questions and hypothesis, as well as the thesis outline.

In everyday organisation management, the desire to seek change is almost perceived as an inevitable aspect of a business life cycle. Indeed, Turner (2017) has argued that many models of change management embrace the fact that when an organisation goes through a given set of business cycles, it makes business sense to re-profile itself (Prosci, (2016) and to keep audit-trail Doyle, (2002) of its activities. In profit-orientated business, this ensures that the margins for-profits do take a sharp decline and continue to recede and to go unnoticed to the detriment of the organisation Eldrod and Tippett, (2002). Doyle (2002) has thrown in a caution that any organisation or business entity makes its own journey: at its embryonic stages, such a journey may be characterised by making a series of decisions. Some decisions can be detrimental to their existence and some beneficial. What is important, Dole (ibid) has insisted, is for the organisation to learn from its own mistakes and to redirect its attention and resources in the areas with the most favourable outcomes. It seems logical to take the point of view of Doyle (2002) given that a bird never takes a flight until all its feathers are fully-fledged; only when fully-

fledged is it able to fly efficiently and successfully. Therefore, between points on a business or organisation loci, are stations of a series of decisions. These may be characterised by indecisiveness, which in the main, can be deduced to be points of business deceleration or acceleration. The totality or sum of these decisions and indecisiveness, all of which either satisfy or distress the commercial objectives of an organisation should all be identified and their origins or loci points identified in order to inform the change management cycle.

In acknowledging the relativity or indeterminate nature of activities resulting from on a business cycle, Cameron and Green (2015) have defined the process of change as congruent to human inductiveness. This implies humans beings cognitive creatures; we are always seeking to do things differently through inventions as well as trial and error. The outcomes of such human desires result in what Cameron and Green (2015) refer to as either process change or product change. They insist that not a day goes by, it seems, without another important discovery or boundary-pushing invention in the scientific fields. Prosci (2016) has alluded to the human desire to record the act of thinking divergently in the way processes are managed or in the way that products are created, recalled, remodelled and reconditioned as definitions that also epitomise human knack and adroitness to improve on the status quo. Perlman and Leppert (2013) have described this ability as an inborn desire to seek for quality and its appropriateness or relevance for use and therefore what prevailed yesteryear is quickly superseded with the current often resulting in the existing rules, products or procedures to be revised. It is this desire for aptness that we engage in inventing and redesigning components, all of which are driven by the desire for efficiency and appropriateness. According to Burnes (2004), appropriateness is itself a never-ending process, stating that these may be related to periodical changes and the resulting transformation has to bring positive outcomes on the end-user.

1.3 Statement of the problem

The various sources quoted so far appear to point out that change is an inevitable part of staging any business; despite this, Rune, (2004); Balogun and Hope Heiley (2008) and Waldersee and Griffiths (2004) have all expressed concerns that successful change management may well be received as a necessity for business survival. Nonetheless, the odds for success are small, especially so in today's highly evolving and competitive environment. Dasborough, Lamb and Suseno (2015) endorse Rune (2004) by noting that the failure rate of nearly 70 per cent of all change programmes is a stark reminder that this process must be handled with the greatest of care. Ayodo (2016) has also been quick to illuminate that the poor success rate for change management indicates the persistent and fundamental absence of a credible and widely accepted framework on how to implement the process of change.

In his work, reviewing models on change management, Burnes (2004) observed that the models presented in the literature are superficial models inconsequential to industry practice or the real world of work. He went on to retort that the frameworks put forward to academics and practitioners were not only highly contradictory but propounded confusing theories unattested to industry and practice.

1.3.2 The consequence CIAT's diminishing membership profile

This study sets the scene on CIAT organisation during the period 1995 to 2015, a twenty-year period when the author of this thesis served within the executive board of the organisation. As the Vice President of CIAT's Education from 2000 to 2011 and President-elect 2010-2011 and subsequently being elected to President from 2011 to 2013. The author continued to serve as part of the Executive Board as outgoing President during the period 2013 and 2014. The impetus for change management came from the various executive roles within the organisation.

In the period of service, the Institute faced a lot of challenges, some of which were exogenous in character such as the fastidious decline of the membership connected to the wider skill-shortage the industry and all professional bodies in the UK still continue to faces. It was also the period when the United Kingdom was affected by a global recession of 2008, which as shown in Figure 1.1, shows a drastic drop in the profile of the core membership to the Institute.

In the last eleven years, the global economic meltdown has also resulted in, the worst downturn

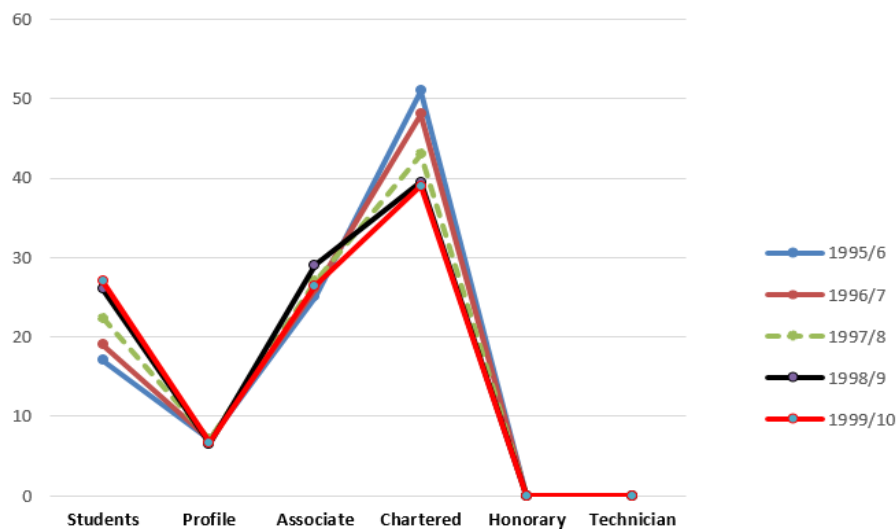


Figure 1.1 Profiling the core membership to CIAT [Source CIAT, 2012]

experienced by various sectors within the UK built environment. This has, in turn, affected various professional body institutions Fortune, and Skitmore, (1994); GVAGrimley, (2010).

Furthermore, the 2008 downturn (Dasborough, Lamb and Suseno, (2015) also resulted in the lack of financial freedom among organisations leading to the suggestion of embracing ambidexterity. However, even before the financial meltdown in 2008, earlier commentators, such as Lawrence (1999) and then Rodell, and Colquitt (2009) were resounding about the significance of institutional bodies to society. Lawrence (1999) emphasises the clear and important role set for society and therefore need, on their part, to be strategic in how they influence the environment in which they operate.

This position taken by both Lawrence (1999) and Rodell, and Colquitt (2009) is a notable concern, and throughout change management, literature has shown more scrutiny in the way organisations work to influence and shape their environment. Indeed from the assortment of perspectives such as strategic management Buines, (2004); Rune, (2004) institutional theory Graetz, and Smith (2010) entrepreneurship Carnall (2003), and even organisational ecology and organisational change management Waldersee and Griffiths (2004). Entering the debate on change management is the construct earlier mentioned: that of the emotional well-being of employees Bell, Ryan and Wiechmann, (2004); (2006).

However, researchers Kraus, (2016); Naidu (2008) are also in disagreement on the role of professional body institutions in the social engineering of the environment in which change management is processed. Despite the varying perceptions, researchers have an unimpeded ability to influence strategic research choices. Therefore, rather, that the notable divergence in methodologies some constructs come together on the understanding that human interaction of the social structure and institutions structure have to converge to a shared understanding or standpoint.

1.4 The need for this research

Given the aforesaid, it seems logical to recognise that a central issue in institutional management research, revolves around the holistic understanding of an organisation seeking management change. In the case of this study, CIAT needed to align itself as a 21st-century organisation in the way it responded to its own internal challenges (endogenous challenges) as well as challenges whose origins are from the outside of the organisation (exogenous challenges).

In relation to ambidexterity, within CIAT one half of the executive focused on retaining the status quo of the Institute and its traditional place in society. The other half was full of minds

who were seeking, through task, forces, to focus on the emerging opportunities in order to optimise growth in the profile of CIAT's membership. This half was adamant that it was only then that the Institute could sustain growth in all of its membership designations.

It is, therefore, the purpose of this research to document and subsequently develop a conceptual framework for use by the executive of professional body institutions on how to manage change in their organisations. This introductory chapter will, therefore,

- Provide an overview of and the significance of the UK CIAT as a professional body;
- Review the need for research related to challenges faced by CIAT and
- Provide the research aim and objectives, scope and, the structure of the research.

Having served as Vice President of CIAT's Education; President-elect then President and as outgoing President in various Executive board sittings, there were countless times when the issue of improving the membership designation for the Institute made the top three agenda topics.

The first challenges the institute set was to seek instruments and opportunities to increase the depth of its membership in all areas and more importantly, to open up avenues to ensure the institution's preparedness to undergo change management. At the route of this desire was the need to ensure CIAT maintained its traditional set up of attracting core Architectural Technologists and simultaneously and steadily beginning to open up gates to the broader professionals within the Built Environment sector.

Indeed as Vice President Education, the profile of the membership shown in Figure 1.1 earlier was very clear to the all executive members the numbers didn't lie. CIAT's membership was nose-diving, and this trajectory was concerning. The Institute, as in previous years was very buoyant on student numbers (new entrants), but for a period of five years, this too was not

shifting to higher margins while the Associate and Chartered membership were plummeting and yet these remained as the core designation for most CIAT membership. Despite the various short term trial-strategies, this trend continued for 15 years, and the Institute needed to take a different course of action if it were to survive for much longer.

With nearly all areas that service the Institute showing a steady decline, as shown in Figure 1.2, even more concerning was the fact that the age profile showed the Institute was not attracting the most economically active members (i.e. those between the ages of 25 to 50 years).

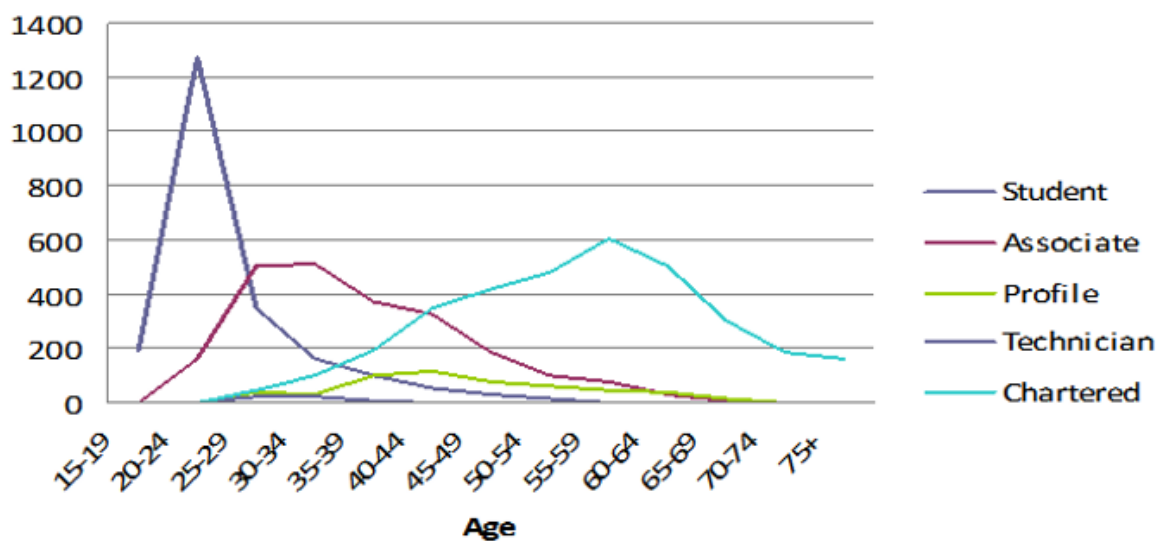


Figure 1.2: Membership grade and age profiles 2010/2011 [Source CIAT, 2012]

This trend remained an ongoing concern necessitating for some strategic steps to be taken. When a further and closer look is given to Figure 1.2, it is clear that across the membership, the most attractive point was the point of entry for the new student (19 to 29 age bracket). Further inspection shows that at the age between 60 to 64 years, most memberships consolidate their chartered status an indication of late development. Perhaps this could be reduced to the conditions attached to gaining chartered status and therefore, the need to relook into this aspect.

Figure 1.3 below shows the membership evolves around the young entrant and then takes a

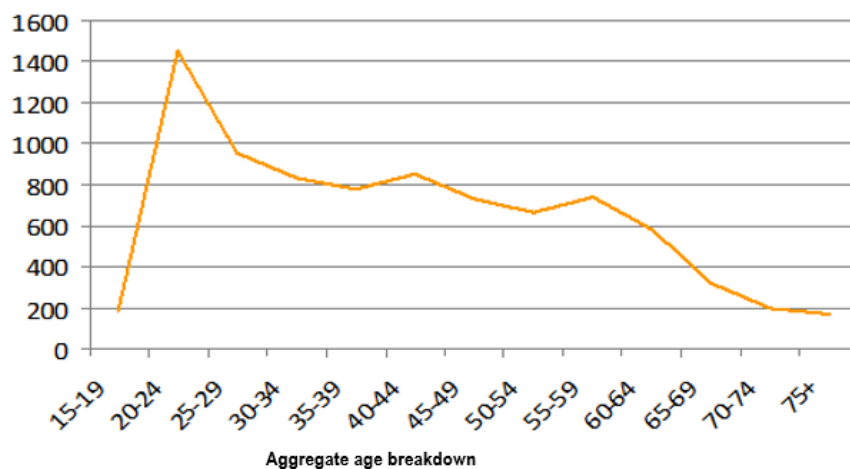


Figure 1.3: Age profile 2010-2011 [Source CIAT, 2012]

steady decline across other age profile. Based on this, it is easy to deduce that CIAT seemed to have a healthy relationship with Universities than with practice organisations. Even this trend was still baffling as the expectation is that when students graduate, they enter practice and therefore, these numbers should persist if the student members value the benefits of membership into their world of work. For how long could this trend continue?

It must be remembered, however, that since the Institute was founded on the 12th of February 1965, it also went to become a limited company by guarantee from 1975 before gaining the Chartered body-status in 2005. For a long period of time, it was a Cinderella of the Royal Institute of British Architects – RIBA.

As the steady suffocation of the core membership persisted, an external research institution was appointed to project the numbers for the Institute leading to 2025. The results were rather staggering. As shown in Figure 1.4, the Holy Grail for the definition of CIAT lies in the chartered membership. Using this designation, CIAT (2011b) was requested to project the numbers likely to convert to chartered membership.

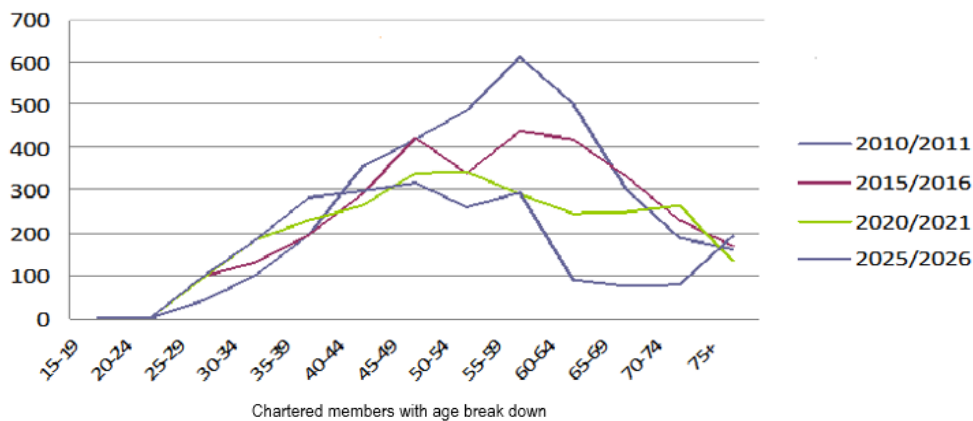


Figure 1.4: Chartered members actual and predicted profiles 2010-2026 [Source CIAT, 2012]

After consulting the full membership, Membership Strands Group CIAT (2011b) reported back that the most predominant profile, by age leading to 2025 was between the ages of 55 and 65 years, again showing a very late entry into chartered status whilst in practice. Yet with the prospect of facing retirement, at this age, the age gap crisis is commensurate to the challenges of other professional bodies for which CIAT was simply a recipient of the downward trend for a widespread skill shortage within the Built Environment.

Further evidence of a downward trajectory for the Chartered membership is also notable in Figure 1.5, which appears to suggest this trend would persist all the way to 2025/26. If these figures were not sufficient to highlight clearly, the magnitude of the problem, then Figure 1.6,

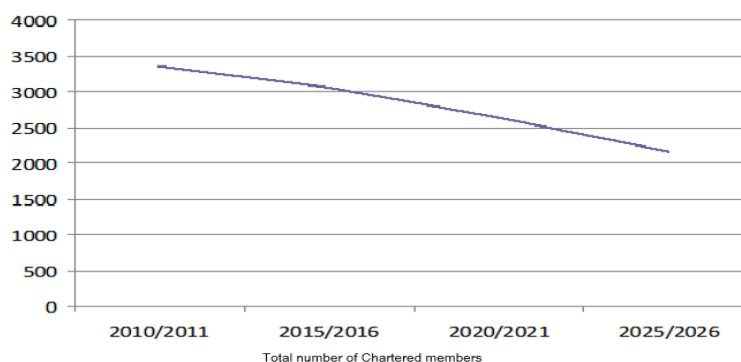


Figure 1.5: Chartered members predicted profile 2010-2026 [Source CIAT, 2012]

which shows a summary of the main loss areas, with the Institute having to rely on students' membership, goes further to show that a change in the management structure has been long

overdue.

In the face of these threats and as shown in Table 1.1, the consequential loss in membership fees and therefore the main lifeline for the Institute and its financial credibility was a further indicator of the need to find what drivers would bring about a turnaround in the fortunes of the core membership to CIAT.

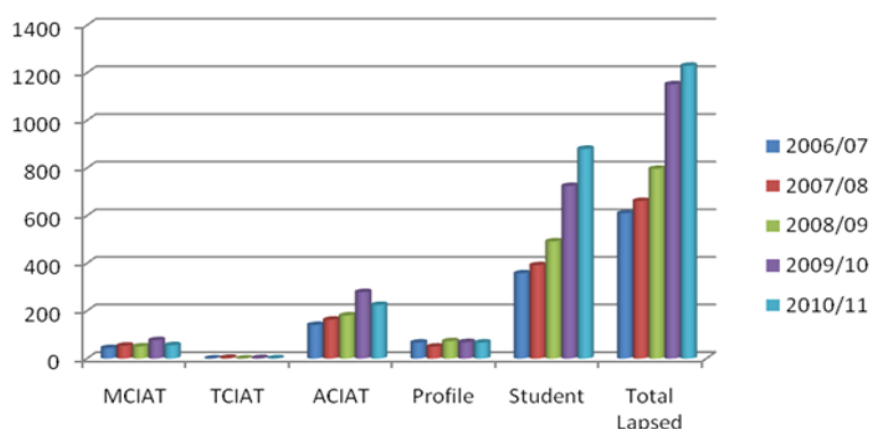


Figure 1.6: Membership designation and lapsed breakdown [Source CIAT, 2012]

Table 1.1: Membership All Grades (Gains and Losses) 2008 – 2011 [Source CIAT, 2012]

| Members Joining/ <i>Losses</i> | 2008- 2009 | <i>Losses</i> | 2009- 2010 | <i>Losses</i> | 2010- 2011 | <i>Losses</i> |
|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Associate | 488 | 195 | 369 | 330 | 391 | 275 |
| Associate Member | 288 | | 214 | | 183 | |
| Associate member from CIOB | 6 | | 5 | | 2 | |
| Associate Student | 173 | | 138 | | 191 | |
| Associate Unwaged | 21 | | 12 | | 15 | |
| Chartered | 62 | 103 | 73 | 138 | 104 | 155 |
| Chartered | 60 | | 69 | | 98 | |
| Chartered Member from CIOB | 0 | | 1 | | 3 | |
| Chartered Member Retired | 0 | | 2 | | 0 | |
| Chartered Member Unwaged | 2 | | 1 | | 3 | |
| Honorary | 2 | | 0 | | 0 | |
| Profile | 99 | 88 | 112 | 84 | 114 | 93 |
| Profile | 92 | | 109 | | 106 | |
| Profile CIOB | 6 | | 2 | | 5 | |
| Profile Unwaged | 1 | | 1 | | 3 | |
| Student | 938 | 427 | 883 | 650 | 838 | 836 |
| Technician | 12 | 1 | 17 | 2 | 15 | 0 |
| Technician | 11 | | 15 | | 15 | 0 |
| Technician Member from CIOB | 1 | | 0 | | 0 | |
| Technician Unwaged | 0 | | 2 | | 0 | |
| | 1601 | 814 | 1454 | 1204 | 1462 | 1359 |
| Overall gain/loss | 787 | | 250 | | 103 | |
| MCIAT gain/loss | | 41 | | 38 | | 41 |

1.5 Previous relevant studies

Turner (2017) in his thesis ‘impact of change management on employee behaviours in a University Administration office’ suggests that recent modules on change management focus on profit organisations and there was not much for University settings. The most famous definition of change is the one by Kurt Lewin Model (1946) but much more recently, John Kotter (2012) identified eight most common errors which are visible in the early stages of change management. Kotter (2012) – a Harvard Professor - posits that organisations tend to allow too much complacency to germinate in the executive leadership which then impairs the vision of an organisation and therefore its ability to articulate clearly why change is needed in the first place. Although Kotter identifies the deficiencies, which might be useful to organisations, it does not provide a framework for practice organisations, CIAT included.

Turner (2017) study, generates a model which is mainly based on the behaviourist models for employees in a university setting. Although the similarities are obvious, Turner’ study (like the present study) was based on seeking the opinions of employees in a *not-for-profit organisation*. To date, there exists no model that is designed to address the opinions of the professional body institution and canvassing their opinions as to what drivers they perceive as being critical to institutional change management.

However, another study by Naidu (2008) examined the impact of the implementation of change management on staff turnover within a large commercial company. Again this is dissimilar in the sense that this would be profit organisations whose set goals would be completely different from those of CIAT as a professional body within the Built Environment.

Therefore no empirical research exists on professional body institutions written by someone from within an organisation and who is able to reach out to the membership within to canvass their exact opinion on what they feel the organisation needed to focus on, the measures it needed to put in place to improve its membership profile in all designations.

The status of this study, therefore, begun from a practice/experience of the real world and to then apply theoretical constructs to practice gained within the Institute; this was followed by the need to translate the knowledge gained from various literature on change and to build this into a conceptual model likely to benefit both from the researcher's experience of the Institute but also the perceptions and opinions expressed by the broader membership within the Institute.

The study, therefore, sets the argument based on Kotter (2012) who added two classes of interpretation of probabilities which include the logical and behavioural school of thoughts. Kotter (2012) fostered the cognitive model of change, which involves four approaches. His approach to change is where the occurrence of the change is derived from real drivers. In the case of this study, the drivers for change are there, but they are unknown to the researcher.

In any event, change can either result in a positive or negative outcome. Yet it is not possible to predict, wholeheartedly, even by working from within, whether the findings will be of benefit to the Institute. Worse still, as someone known to have served as part of the executive, there is always apprehensiveness abound in asking the broader membership what they think about the internal processes. On the one hand, the apprehensiveness comes from the fear of being told the unexpected and also what they believe the leadership ought to put in place to bring about the most desired change. The basis of this theory is that change depends on individual perceptions of their world and is therefore largely dependent upon the amount of information available to the

decision-maker at the time of the decision. The resulting opinion could also be influenced by both internal and external factors known and unknown to the respondent. Therefore the cognitive approach model is divided into four different categories which can be explained as follows:

- There are known ‘knowns’ factors for change where the risk for change can be identified yet the prospect for success are difficult to anticipate; they are bound to be defined by so many causal variables.
- The known ‘unknowns’ factors where a source of information for change may generate disaffection within the organisation and are identifiable but a prospect for success cannot be anticipated or attuned to a given set of factors;
- The unknown ‘knowns’ where members may know about the factors needed to institute change, and the causal factors can be traced to events or decisions within the organisation. However, there is also the associated constraint that members may decide not to share these but keep them private.
- The unknown ‘unknowns’ where a reason for change has not been identified and therefore the driving factor for change remains hidden or unknown.

This information is represented in Figure 1.7. The approach accepts a subjective probability

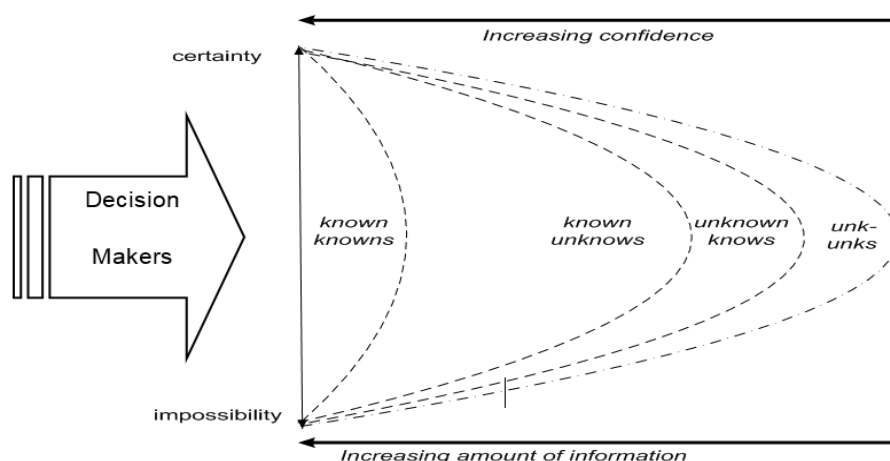


Figure 1.7: The Cognitive Model of Change uncertainty (adapted from Kotter 2012)

which suggests that an event occurs in the future because of a decision-maker acting in the present, and not only because of the external factors. It shows the distinctions where a probability distribution can be assigned to the occurrence of a change factor and the condition where it is not possible to assign its source.

Given the aforementioned model of change, it is important to this study that the research is set out using Kurt Lewin change model which fulfils four conditions (refer to Figure 1.8)

1. Understanding the current state
2. Disaggregating the conditions leading to the need for change (unfreeze)
3. Allow the change drivers to be recognised (change) and to then
4. Lock these in and freeze

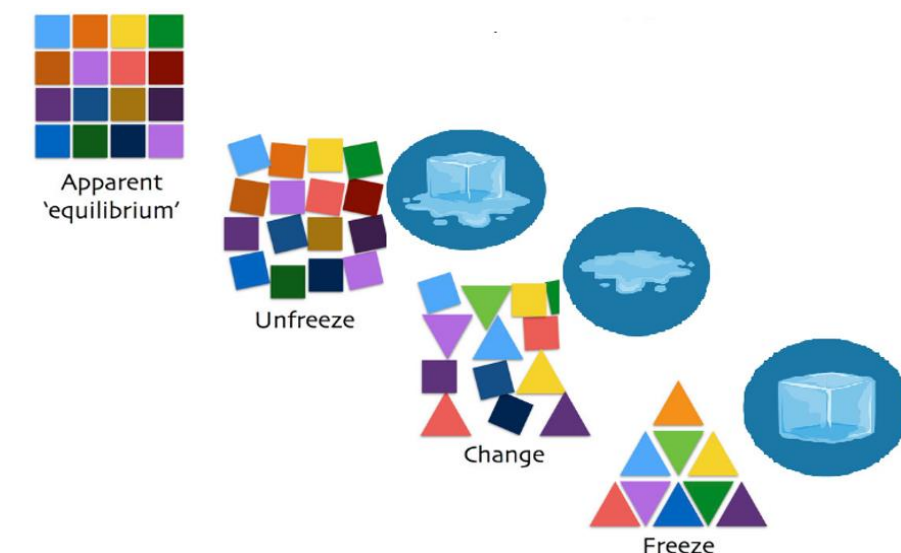


Figure 1.8: Research focus based on Kurt Lewin's Change Model (adapted from Kotter, 2012)

1.6 Research scope and boundaries

The review of the literature suggests that the change management model are contradictory and more theoretical to apply to practice. Both Kotter 2012, Kraus (2016) and Turner (2017) have presented evidence of complexity in their models. Turner (2017)) reported that change

management models must have some uniqueness in that it has to be contextual to the organisation in question. They further posited that the tendency to go over theories and change models from different disciplines might help to generate underpinning knowledge, but in the main, this is where it stops. To minimise this, however, Turner (2017) stressed that experience is required in handling the respondents and the dataset so careful judgement is made to ensure the data is unique and likely to represent the actual challenges that the Institute faces. The aspect of risk and uncertainty associated with change models may include the following:

- The availability of information: there is a need for the change model not to represent some of the drivers if these have not been subject to audit scrutiny and therefore in the open for review;
- The prevailing membership: if this is skewed towards student membership, it may not be wholly representative, and the findings might be invalid and not reliable. Capturing all the designations among the respondents is critical;
- The effects of the opinions expressed may also be predominated by individuals not currently practising and therefore unrepresentative of the view of the world and the challenges faced by members in practice organisations;
- Regional representations: The need for a higher level of stratification to ensure all regions in which CIAT is presented may prove challenging given the limitation of time and resources to get to everyone;
- Low turn/returns: In order to make inroads a large sample frame is necessary to generate a sufficient data sample;
- Interpretations of the perceptions: the data collected will be on Likert scale using closed questions and some open-ended questions. In the interest of improving the pace at which the data can be analysed, very few pockets for qualitative data will be allowed. The

majority of this will have been captured during the piloting stages.

This lack of a formal approach to change management and the simplicity with which a change management model can be generated which is informed by other model is an issue the current research addressed by ensuring the information collected was unique to CIAT.

Furthermore, the study will target CIAT practitioners within practice, using the databases to which the author had access serving as the executive for the Institute. The study will collect views from Students, Associate, Honorary, Profile and Technicians as well as chartered members. A cautious decision was taken to exclude the executive board members as respondents. These were deemed to be sole recipients of the findings. It is them that would act on the identified drivers and ensuring that prophylactic strategies mirrored the challenges within CIAT. This will be the only way that strategies would bring up fruitful and impactful measures as expressed by the broader membership.

1.7 Aim of the study

The overarching aim set for this study is to develop a framework for managing institutional change for the Chartered Institute of Technologists – CIAT and other professional bodies.

1.7.1 Objectives of the study

1. To critically analyse how the membership compare in the ranking of factors driving institutional change-FaDic;
2. To ascertain the extent of agreement as to the value, desirability derived from institutional change by the broad membership of CIAT -VaDIc
3. To examine existential factors contributory to increased resistance to institutional change
- Exfacirc;

4. To quantify priorities for institutional change management
5. To develop a conceptual framework for managing and delivering Institutional change for CIAT.

1.7.2 The main research question

‘Among the broader membership, are there notable variations in the drivers, values and desirability factors derived from institutional change management?’

The study set out the above research question to act as a yardstick for further probing and interrogation of the data targeted to provide answers to the main research question:

1. Are the perceived factors driving institutional change the same among the designated membership?
2. What is the perceived value and desirability for institutional change? Is this the same among designated membership?
3. Is there unanimity among the membership as to the priority areas for change?

1.7.3 Research hypotheses

This refers to the setting of a hypothetical scenario to each question and objective set by the researcher. Gonzalez (2018) writing for Study.Com, defines a hypothesis as a speculation of theory based on insufficient information which is research proves or disprove through further testing or experimentation. Gonzalez (ibid) further insists that a Null hypothesis should state a negative outcome and may be stated that there is no gain or positive outcome or simply that ‘that there is no statistical significance between two variables’. The Null hypothesis is the statement the researcher is more concerned about and sets out to disprove. The alternative hypothesis is simply the inverse or opposite statement to the null hypothesis; it is often stated as a positive statement which counter-opposes the null hypothesis.

Gooch and Vavreck (2019) have given two examples on how to set null hypotheses and the inverse of which are set out as alternative hypotheses respectively as follows:

Null hypotheses – H_0 the data sequence was generated in a random manner (no bias)

Alternative hypotheses – H_1 the data sequence was not generated in a random manner (there is bias)

Null hypotheses – H_0 : No association exists between X and Y

Alternative hypotheses – H_1 Association does exist between X and Y

Given the above outline, and taking into account the main factor set out for the study, the hypotheses emerging for this research are as follows:

1. Perception of factors driving institutional change

Null Hypothesis (H_0): The perception of the factors driving institutional change are the same among the designated membership; (i.e. there are no significant differences)

Alternative Hypothesis (H_1): The perception of factors driving institutional change are not the same among the designated membership. (i.e. there are significant differences)

2. Perceived value and desirability for change

Null Hypothesis (H_0): The perceived value and desirability derived from institutional change is the same among the designated membership (i.e. there are no significant differences)

Alternative Hypothesis (H_1): The perceived value and desirability derived from institutional change is not the same among the designated membership (i.e. there are significant differences)

3. Priorities for institutional change

Null Hypothesis (H_0): There is unanimity among designated membership about the priorities for institutional change. (i.e. there are no significant differences)

Alternative Hypothesis (H_1): There is no unanimity among designated membership about the priorities for institutional change (i.e. there are significant differences)

In the process of testing the variables set above, the study will establish a position and the extent to which the findings support each of the set objectives. Therefore, a sequential process for the

generation of the conceptual model will unfold as follows:

1. Determination of the types of factors that drive change management (IV1), it is essential to determine whether these are exogenous or endogenous to the organisation.
2. Identification of the factors perceived to add value and to ask whether the perceived changes are desirable and likely to yield the expected change management process (IV2).
3. Determination of the existential factors which may offer the opportunity for the membership to resist if they feel there are insufficient strategies to allow the benefits of change to be realised (IV3).
4. Identification of the priority areas among the membership so CIAT can ensure sufficient measures are in place to minimise the anxiety membership may feel, often associated with change (IV4);
5. The results attained from all the above stages then informed the dependable outcome (DV): the final conceptual model for institutional change. If these are clear and there are no notable omissions (no resistance will be given). This process is further shown in Figure 1.9.

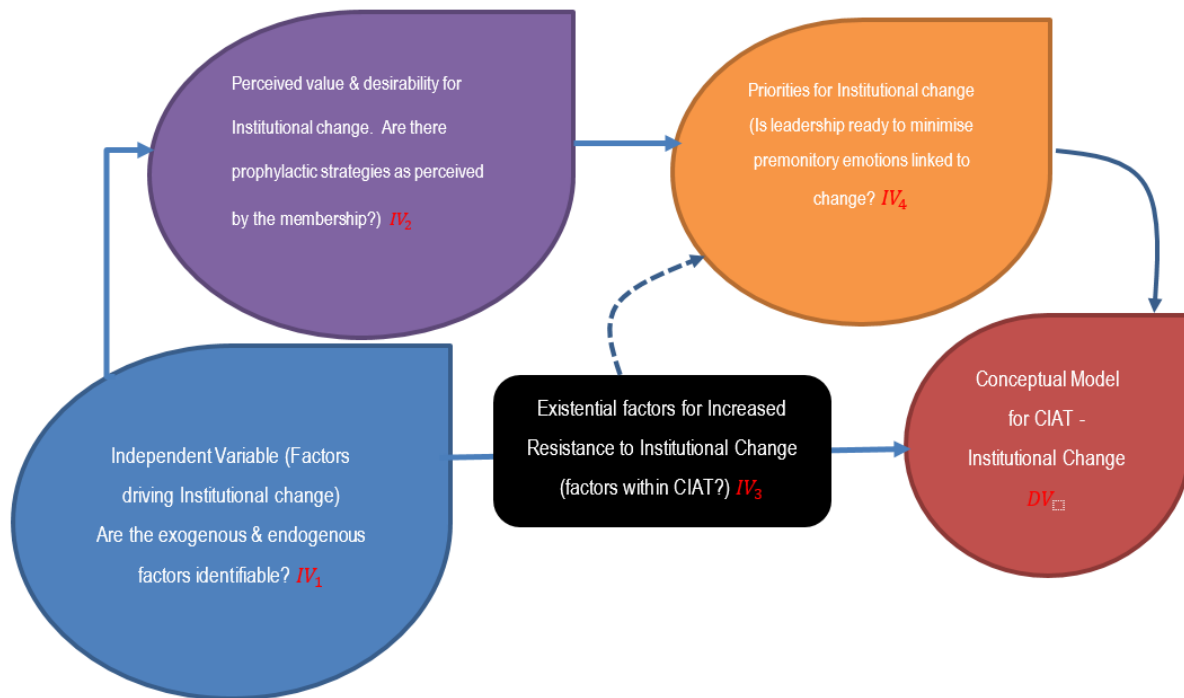


Figure 1.9: Independent Variables feeder-link to Dependent Variable and in turn inform the conceptual model for institutional change

1.8 Benefits of the research

The change management model for CIAT seeks the sort of changes that membership envisage would benefit the Institute in its effort to become more representative and an institution that represents the views of the membership. Seeking the response of membership on change management would allow the institution to get the collective view of the membership and therefore an opportunity for the Institution to canvass the opinions of those it sets to serve.

In July 2011, the CIAT membership Strands Group chaired by Sam Allwinkle, presented its Interim Report 01 CIAT, (2011). The report states:

The background and context to this paper is based upon the remit and deliberations of the Membership Strands Working Group, a short life sub-group of the Membership and Education Committee. This group was set up in recognition that the CIAT, like many other professional bodies would be facing unprecedented challenges and need to plan for the future change. This will require a strategic approach based upon critical reflection and creative visioning if the CIAT is to maximise the opportunities in the short, medium and long term but minimise any potential threat to the membership, the discipline and future viability of the Institute.(CIAT, 2011, p.1).

It is clear from the reports that CIAT has been aware, concerned and intent on measures to mitigate the consequence of dwindling membership numbers. This study took a surgical view of the issues and therefore the suggested study methodology of seeking the participation and views of the membership implies that the conceptual model will be informed by the wider patrons of the Institute. Response on a wide range of issues, among them, an understanding of the key factors which the membership see as key drivers to institutional change and the need to probe deeper the existential factors likely to contribute to the increased possibility of resistance to change. The knowledge gained in these areas is valuable towards the modelling of the key drivers to successful change management within CIAT. The drivers will enable the Institute to identify a missing body of knowledge critical to the future standing of CIAT.

The findings will also help to cast an understanding of the value placed on a wide range of issues in which CIAT is traditionally known to deliver as a professional body. However, as literature consulted has shown, change is an emotional process, and therefore, it is critical for this study to articulate what issues the broad membership expressed, as their main priorities for change. Similarly, the mere act of knowing what matters most to the membership implies that the change model reflects the concerns and above all is seen to offer solutions.

The four reasons that justify the need to focus on institutional change management are:

1. CIAT (2011) acknowledged the many challenges it faced and just as with other professional bodies, the economic downturn has impacted all professional bodies in terms of the decline of membership across the various designations. Inherent in this is that when a country's economy is hit, it is the construction industry that takes the punches and yet the last one to get onto its feet. The CIAT itself admits that:

These are challenging times for the CIAT and the membership, set within the context of an economic downturn and employability, a higher education system that is being

privatised through stealth, sustainable environmental policies and legislation growing exponentially, the impact of the next generation of IT and BIM on design, construction and use of buildings and the ever increasing need to up skill in a fast changing world.

2. If the preoccupation for CIAT has been to retain the figures for membership back up again, *for a not-profit-organisation*, it is critical that it shares its concerns and captures the views of its memberships; for the reason that such issues do portray the future viability of CIAT, every opportunity to set the institute ready to adopt new ideas is all the more necessary.

The different grades of membership are critical; both the student membership and associate membership which for some time have been healthy and very close to a maximum profile. However the conversion rates from the students to membership is poor with approximately 5% becoming full members. There is therefore a need for an exploration into why there is such a low conversion rate together with the barriers to progression to Chartered Membership (CIAT, 2011, p.1).

3. It is also noted that the recent profile for CIAT shows that for every 100 new Chartered members coming through the current system about 150 are also leaving. CIAT acknowledges that this position is not sustainable. CIAT's membership is ideal as it is bound to reflect the internal challenges it faces. The membership will point to the internal (endogenous) factors perceived to be the drivers for change. They will also help to illuminate on what they perceive as outside challenges (exogenous factors) that undermine the efficiency of the institutional body in the 21st century.

1.9 Expected research outcome

The focus of the research is to develop a conceptual framework for institutional change management. The proposed conceptual framework is expected to inform CIAT on the views of the membership. It is also presented as a model that reflects, CIAT's recognition of the central role and significant role of being close to the shop floor, listening to the concerns of the various designations that make up the membership. The research outcome will therefore, include an enhanced understanding of membership needs and the strategies they see as key driving factors to accommodate the institutional change management.

1.10 Structure of the research

The structure of the thesis has been organised in a logical method in order to permit the reader to understand the thought processes of the author in fulfilling the study aim and objectives.

The order of actions undertaken to realise the study's aim and objectives is summarised as follows:

- a. Firstly an extensive review of relevant literature relating to organisational change management was performed. This allowed the author to capture a wide range of views, expressed in previous findings which underpin change management principles expressing and verbalising the conceptual model ideal to CIAT as a professional institution. This formed the basis for testing a working hypothesis for each of the objectives set in line with the anticipated objectives of the research
- b. Throughout the research, the sources collated as part of the literature review were scrutinised, and data extrapolation from the research instrument forms the basis for comparisons made to other research;
- c. Before the main data collection, the piloting of the research instrument was carried out using the Education task force groups led by the author Vice President Education. The task force was therefore utilised to test the viability of the structured questionnaires and the themes set around the four objectives. The interviews were also carried out as part of these task force meetings and the same instrument was sent out to randomly selected respondents conducted to test both the validity and reliability of the main data collection technique. Brannen, (2005) has indicated that the validity of the extent to which the themes in questionnaires measure what they are meant to be to undertake a test and retest through the piloting stages. The pilot stage was therefore carried out to review relevant information which reflected the wishes of the membership.

- d. The study finally administered the data collection through a questionnaire which led to the generation of non-parametric data. This offered the study, the opportunity to extrapolate quantitative data analyses which further helped the testing of hypothesis and non-parametric statistical analyses.

The thesis is organised into nine chapters. Every chapter postulates relevant information relating to the objectives and a summary given to recap what the chapter achieved.

Chapter two presents an overview of the change management process. Several definitions are offered according to the existing themes, theories and models. The definitions relating to change management are provided to present the historical context. In doing this, the chapter presents the current position adopted by the study on some of the themes transferred from globe literature on change management. The relevance of the change management to an institutional body such as CIAT is correlated with the theories on organisation change management.

In Chapter Three, the main research methodology is presented as well as an in-depth method in which data for the study was collected. Tools and techniques used to extrapolate data are outlined, ensuring that if dependent and independent variables are presented, the rationale for doing so is explained. The chapter also presents some of the strategies utilised for data handling as well as the underlying principle behind any statistical methods and techniques adopted to formulate further meaning and how these then fit in with the study objectives.

In Chapter four, the analysis of the key factors driving institutional change undertaken. The interpretation of the factors is presented together with a discussion made to closely reflect the relevant theories and literature associated with change management theories.

Chapter five gives substantial attention to address the perceived value and desirability factors derived from the institutional change as deduced by the broad membership of CIAT.

Chapter six considers the areas likely to give the most cause to resist change. It is critical to the study to know what these areas are and therefore, the extent to which they can be accommodated to inform the change model. Given the position of CIAT, being heavily reliant on its membership for its viability, it is important to know which factors generate the most disaffection. The analysis in this chapters offers the opportunity for the research to identify areas perceived as pitfalls to successful change management. It is also critical to the process of change management to ensure full consultation is made with employees of an organisation given the apprehensiveness always associated with change management.

Chapter seven considers the opinions of the membership in relation to the priority areas for change management for CIAT. The findings from this analysis will help the study to configure the general views of the membership and proffers the executive of CIAT where the membership thinks are the priority areas to bring about the most desirable change. It is critical to the process of change management to ensure that full consultation eases the apprehensiveness always associated with change management.

Chapter eight presents the conceptual framework, which should reflect on the contribution of the various designations of CIAT membership. It gives an interpretation of the priorities and also an opportunity for the organisation to ensure strategies that are perceived as prophylactic instruments to the most desired change management model for CIAT.

Chapter nine presents the limitations of the research models and the conclusion of the study. As a summary of the research findings, the chapter indicates the most important things associated with change management. The conclusion also provides areas for future research.

1.11 Summary

This chapter gives an understanding of the research undertaken in the area of change management. The chapter outlined the degree to which a conceptual framework for change management in CIAT is needed amid the constraints that continue to plague the professional body institution. A broad range of literature has been reviewed in order to generate sufficient and the necessary understanding of the theories and models associated with change management. The position taken by leading researchers on the subject of change management is noted and informs the positioning of the aims and objectives for the study. The key steps to be adopted when undergoing through change management are reviewed and adapted in the light of the challenges change CIAT faces.

As the study is presented, there is no widely accepted, and understood or accepted framework ideal for facilitating change management in a professional institution within the built environment. Although the sample frame only focused on the CIAT, the findings presented have far-reaching outcomes for other professional bodies such as Royal Institution of Chartered Surveyors - RICS, the Chartered Institute of Building -CIOB and the Royal Institute of British Architects - RIBA.

Taking the above into account, in this study, the challenges and constraints associated with organisation change are reviewed and the extent to which they impact the need for change in CIAT receive further consideration. A review of the literature shows there is a vacuum for change management frameworks for institutions such as CIAT. The models presented in the literature are more biased towards the commercial sector as opposed to the not-for-profit organisations. Given the aforesaid, it is critical, given the gaps identified, that a model which addresses some of the challenges CIAT faces is presented. In order to make the model work, a close consultation of the broad membership anchored the arguments for several reasons: firstly

that a model should always reflect the needs of the members the Institute is expected to serve. Secondly, it is critical to the long term survival of the change model that addresses the fears of the professional body. These can only be addressed and solutions fulfilled if the broader membership is fully consulted and involved in the generation of the framework.

The next chapter presents an overview of the change management theories appropriate for the objectives set by the present study.

2.0 Literature review on change management

2.1 Introduction

This chapter is mainly descriptive and discursive but ensuring a systematic analysis of the theories and models associated with change management. Attempts are made to offer contrastive analysis to ensure any notable similarities and logical flow of the theories are those that relate to change management, in particular, relating to a professional body institute such as the Chartered Institute of Architectural Technology - CIAT.

Particular attention is given to the quest for understanding the reason change comes about. Much of the literature appears to narrow this down to the inherent supremacy of the thinking capacity that human beings possess. Humans can notice a difference, visualise what can improve, figure out how things can be done and contextualise how much the difference will come about. Many authors attest to this as the cognitive gift humans have, albeit in different shades. With this understanding, it is postulated that change is inevitable, ongoing, and necessity. Change characterises the inevitability of a heightened process where humans, born with its capacity, work in concert, (in groups), are encouraged to think, and not surprising, seek change. However, people will occasionally resist change and also criticise it whenever it is introduced.

The chapter is structured to explore the literature on change management to identify the different models, philosophies and paradigms that offer the subject knowledge- exclusive to it. In doing so, the researcher will establish the theoretical underpinnings of the work and hopefully find research methodologies appropriate for the study and therefore assist in fulfilling its aim and objectives. As set out in chapter one, this research was set out to understand the current literature and inform the development of a conceptual framework for managing institutional change for the Chartered Institute of Architectural Technologist (CIAT). It is of interest to the

study to gain knowledge in the way organisations respond to both internal – endogenous – and external or exogenous factors as drivers for change management.

In its current state, CIAT has its history going back to 1965, when its founding members were brought together by the Royal Institute of British Architects (RIBA) to form an Institute for Technicians. Through a survey carried out in 1962, ‘The Architect and his Office’, it was highlighted that there was a need for a separate body that could run and represent the interests of architectural technicians. After several years work, with Architects mainly seeking for a distinction to be made between ‘Architects’ and ‘Technicians’ this campaign was successful and on the 12th February 1965, the Society of Architectural and Associated Technicians (SAAT) was established. After twenty years of successfully standing on its own, SAAT transformed itself, purposely to attract and represent a united voice to like-minded professionals who increasingly wanted a more substantial platform of a similar footing to RIBA but exclusively offering their services to Architectural Technicians. Endacott, A, CIAT (2005)

Consequently, in May 1986, the SAAT changed its name and became the British Institute of Architectural Technicians (BIAT). However not long after, by 1994, the institute opted to give more and robust recognition to the role of ‘Technologists’ while still maintaining the ‘Technicians’ designation. It was at the back of these intentions that a new certification body ‘The Business and Technology Education Council’ (BTEC) was established with a new designation for ‘Technologists’ which rather quickly, caught up with industry practitioners. Thus by 2002, the qualification of Architectural Technician was introduced.

This new certification body of BTEC brought in sweeping changes, offering a series of qualifications to a new crop of professionals called ‘Technologists’. Therefore in order to furthermore reflect the move towards BTEC-led qualifications, the body felt compelled to

represent the interests of ‘Technicians’ and ‘Technologists’ as a sole mission and responsibility of BIAT.

In July 2005, the institute gained Royal Charter status giving way to the designation of the Chartered Architectural Technologists - MCIAT. Presently the institute represents over 9000 professionals working or studying in the field of Architectural Technology. To date, CIAT remains internationally recognised as the sole qualifying body for Chartered Architectural Technologists. As a professional body, the institution is guided under the following aims (CIAT (2005):

1. Promote, for the benefit of society, the science and practice of Architectural Technology;
2. Facilitate the development and integration of technology into architecture and the wider construction industry to continually improve standards of service for the benefit of industry and of society;
3. Uphold and advance the standards of education, based on competence, practice and conduct of members of the Institute thereby promoting the interests, standing and recognition of the Chartered Members within the industry and the wider society (CIAT, 2011). These have remained the main designations under CIAT, although as reported in the Architectural Technology - AT magazine (AT, 2015) a new designation of a Chartered Environmentalist has also been included. This new designation is as a result of CIAT being licensed to award the Chartered Environmentalist Qualification and elevating professionals under this designation the opportunity to qualify to a chartered status level.

As an organisation CIAT remains a membership-based and run by an appointed executive board and a council, both of which are ushered in periodically, to manage the affairs of the institute.

CIAT is headed by a President who is also the Chair of the Council; as a trustee, this individual is expected to serve a full 2-year term. Once elected, the president spends a year in a receding role as a president-elect (*the handover/transitional period*) and then go on to serve a full 2-year term. Once the handover is finished, the same individual is also expected to spend another year as *immediate past president* (*working alongside the president-elect*).

This transition of staying in post for four years ensures there is a smooth mentorship of a year to facilitate more efficient change management. CIAT presents an excellent example of an incremental style of change management (covered in chapter 1). Change happens in other sectors and contexts, but this study is limited to unravelling it in the operations of CIAT.

2.2 What is change management?

The subject of change management within an organisation is something that takes place all the time. As it involves people, it is essential that change is allowed to manifest in a sensitive manner, ensuring that the activities affected are not altered but made better or delivered with improved efficiency. There are always severe consequences if proper measures are not taken to allow change to take place. D 'Ortenzio (2012) has highlighted how employees, are often the least consulted but have the most impact on the positive outcomes of a change management process.

The Harvard Business Review (2018) offers an insight into change management which it defines as the process that enables a business to respond to its environment in which it operates. Change can be linked with four different manifestations. Whatever the type of change, four elements of this manifestation, as tabulated in Table 2.1 may be present.

Table 2.1 The four elements to change

| | |
|---|--|
| 1 | Change is as a result of disaffection with the present management strategies |
| 2 | Everyone concerned realise there is a need to develop a better vision for the future |
| 3 | Necessary to develop strategies to implement change |
| 4 | Expect some resistance |

1. It is suggested that change mainly arises as a result of unhappiness. Often employees or the executive may not be happy with some conditions of work, the general response by management or some strategies left in place by other executives. If any of these matters are brought to the attention of the executive, or the body of governors, then there is an air of inevitability that something ought to be done.
2. The change will come about when it is also apparent that the company appears to have lost its vision. When this happens, those that have worked for the firm the longest will tell everyone how things used to be different. When this level of disaffection begins to filter through to the executive, it is a signal that something needs to be done.
3. Any demand for change will also require that strategies are put in place to ensure the desired change takes place.
4. Whenever change comes about, its manifestation is not always smooth and; there are also bound to be individuals who will be unhappy and therefore ready to offer some resistance. There is never a manifestation of change whichever takes place without some discontented voices.

Why are these four elements almost exclusive to any change process? Cameron and Green (2009) agree with Burnes (2004a) that change is effectively a process that takes place even at an individual level – the individual change.

“Once individuals have the motivation to do something different, then the whole world can begin to change” (Cameron and Green, 2009, page 9).

Burnes (2004b) takes a similar position when he earlier asserted that an individual’s behaviour is akin to a group’s behaviour. Buchanan, *et al.* (2005) have also postulated that the way

individuals stick out for each other is a behavioural adaptation symptomised by the collective beliefs inert to the group they espouse to as a social definition of both themselves and the group. These same group members are interwoven and interlaced, making it hard for outsiders to understand, let alone subscribe to the group custom as adopted by all individual members. This is certainly true given that the old saying goes: *birds of a feather flock together*; implying that people who share the same interests and therefore similar aspirations will tend to spend more time together.

2.2.1 The ontology of change

The Merriam-Webster (2019) defines Ontology as:

“a particular theory about the nature of being or the kinds of things that have existence.”

Ontology, as a branch of philosophy, examines the concept of being. It addresses, questions like: how is it that humans have the tenacity to seek change (*the nature of being*)? Some authors such as Dawson (2009) suggest this could be due to monotonous occurrences and the human capacity to predict outcomes (Waldersee, and Griffiths, 2004), which sometimes is a derivative of the ease with which repetitiousness is perceived (Stacey and Dunphy, 2001), or sameness (Rune, 2005). The effect of too much uniformity, as well as the lack of it, has also been cited as a trigger for change (Proctor, 2014). These issues create an insatiable desire to progress, improve profit margins, produce better products and make it easier to gain the competitive position that every organisation seeks. These traits persist even at an individual level; whether it is the recognition for bringing about change or coming up with a novel product. These are the things that make life easier: they are the processors or simply, the inherent drivers of change.

2.2.2 The epistemology of change

Given those as mentioned earlier, the analysis of literature starts by creating a general view of the knowledge that abounds in the field of change management including connected terminologies, and the next subsections identify the various theories and models articulated around the various shades of change. The Merriam-Webster (2019) offers the definition of ‘epistemology’ as:

“The study or a theory of the nature and grounds of knowledge, especially with reference to its limits and validity.”

Based on the above definition, this study attempts to address the understanding and applicability of epistemology which will be made by reviewing the literature on change management especially those that consider the need for change (*nature*); the motivation for change (*grounds*); the impact it has on individuals thus, the organisation seeking change (*knowledge*) and the extent to which the decisions generate the desired change (*validity*).

2.2.3 The desirability and propensity for change

In the same light that the definition of ontology is perceived as a process of seeking change (Burnes, 2004) and remains intrinsic in all human beings; ontology can also be translated, after Proctor (2014) to be the self-accentuating knack or habit that all humans have to reinvent. It is inbuilt willpower that Mento, Jones, & Dirndorfer (2002) identify as a cognitive platform and the basis upon which human beings seek novel ideas. According to the Harvard Business School (2018), these traits are all explained by the propensity or knack to crack things upon observing the difference in the before and after. Müller *et al.* (2011) reasoning on the willpower to reinvent, shapes the belief that the aptitude for variation, is fortified by another Kurt Lewin’s model which, at the heart of it, postulates human’s ability to seek better of what was understood before; they insist that the cognitive belief held is always stronger if processes have been

witnessed to materialise from intangible to better tangible-objects (*concept of experiencing the environment*).

The desirability for change, therefore, is in the value of the things or process of things of value to us, which are the things we believe in. Seeking a change, Burnes (2004b) insists, comes from this very insatiable desire to compete with those around us. Similarly and just as technology and social settings contrive, so is the desire to seek change. It appears, therefore, that the never-ending aspiration to put logic to settings or scenarios that are perceptibly rational defines what we do as human beings. Rune (2005) reckons that being human entails within us to seek to engineer things, a trait we acquire from the cognitive brains and which allows us to try to understand and rather imperatively, to investigate our surroundings and the environment in which we find ourselves.

2.2.4 Appropriateness of change management

The desire and value for change are only part of the definition for the completeness, suitability and appropriateness of change. Change is not wholly understood unless the risks, as well as procedures and stages of a production process, are well understood. In project management, any new procedures and routines may well have to be simpler to understand without which there will be resentment, desire to offer resistance and counter rejection of any proposed changes if they are believed to impede the quality of the work, credibility and reliability of an already established product. All these as sources of concern may be in the way to bring about questions on the appropriateness of the process intended to bring about the desired change. Burnes (2004a) has warned that during the transition for change, a series of risks will remain which may then jeopardise the achievement of the desired outcomes or project objectives especially should the desire and value factors be distinct to the main drivers for the change. Matthews (2002)

advocates for the need to draw together the interests and needs of the many participants as long as they are connected with the entity or an organisation intended for change.

However given that change is in itself inevitable and an intrinsic aspect of human desire to evolve from stage to stage and from one generation to another (Burnes, 2004b), likewise, it is important to distinguish the perception of change at an individual level to that which persists at a group or corporate level where the several needs of individuals, will and collectively, define the multilateral and collective responses to be attained. Cummings, Bridgeman and Brown (2016) have argued that the vision for change has to be made obvious and discernible and should not be handled as a process that is disguised from the employees. Doyle (2002) goes further to acknowledge the relevance of effective consultation by stating that change management is difficult to fulfil until one has managed the process not once but several times. Doyle (2002) further insists that if history is anything to go by, the most successful change management recorded are also linked to bringing in external advisers. Eldrod and Tippet (2002) take the perspective that any organisation wishing to succeed with the change process should equally be prepared to open up its accounts and internal management operations to the outside world. It is only then that those invited to study, act as external auditors or advisers can identify the best definitive loci points to tweak in order to bring about the most incisive successful change that will benefit the *modus operandi* of an organisation.

2.2.5 Change management based on prophylactic strategies

The principle of bringing outsiders into the organisation that is seeking change is one that professional institutions should emulate. The CIOB (2018) recognise that project management for the built environment is different to managing an IT project. Yet there are many parallels which the field of IT can bring to the benefit of projects in the Built Environment and how they are managed. It encourages the Built Environment to open doors to the wider world of project

management; a field that transcends human endeavour:

Programme management is the process of managing a group of related projects in a coordinated way to achieve benefits that would not be available from managing them individually, and is often used to improve an organisation's performance. In practice, and in its aims, it is often closely related to systems engineering, industrial engineering, change management, and business transformation (CIOB, 2016).

The UK's Change Management Institute - CMI (2019) and Association of Project Management – APM (2018) have likened the transformation of a business to that of a typical construction project, insisting that the planning for change management should be enlisted to specialist entities. The APM insists that not all successful businesses, start from a level of absolute certainty. Still, at the back of such successes, there are many episodes of indecisiveness which may be linked to loci that an organisation takes as it matures through its life cycle. The APM (2018) adopts the construct of scale as being just as important as the capital resource to prop up transactional decisions which are as critical as the human capacity to innovate and deliver for the organisation. It insists that these factors are linked to scale in that more prominent organisations tend to do better largely due to having a divergence of views and capacity to deliver compared to smaller and sole trader organisations. Despite the difference in scale, the CIOB (2016) to recognises that the process of change management should always be linked to the programme mandate, which in turn ought to originate from the overarching mission statement or one of the underlying principles of change. It insists that clarity in the mission statement and the relevance of it is more pronounced in large organisations. The Harvard Business Review (2018) takes the collective view that the executive leadership of a business entity, which also persists in all manner of projects, whether at sole trade, Small to Medium Enterprise - SMEs or Multilateral level all endure the same management processes. In change management, these processes discern the view that every business should readily captivate the dynamism of change. A business that does not mutate with the times is a business waiting to stagnate and fail (O'Reilly and Tushman (2004).

It is undoubtedly the case that in project management, prior to a project starting, preplanning and scheduling are taken as a prophylactic or preventative measure to project failure. In this context, planning is conceptualised as a series of decisions and actions that allow the project team to schedule the organisation's decisions that align with the business needs of the customers (APM, 2018). It comes as no surprise that if decisions have to be made, they should always correlate highly and have much interplay with the organisation's overarching mission goals/statements (Business Harvard Review, 2018). Just as the scheduling of activities identifies what elements of a project should be done first, second and followed by a given set of activities and which subsequently, lead to the completion of phase 1 and then phase 2 and so forth, it is clear that planning is iterative and every phase of it is informed by the phase before.

It is perhaps the same explanation as to why project managers or planning engineers spend innumerate hours strategizing a sequence of activities. It is not because project managers planners/ are obsessed with preventing any possibility of paralysis, stagnation or at worse, the total collapse of a project but the ultimate of project management is to achieve a perfect project outcome. Amid any uncertainty; planners by default become more anticipatory of the significance of any unexplained lags notable in the process of scheduling activities and decisions. The fear that such lags may beset the success of a project brings the best of planning or project management adroitness which is driven by the desire to have in place prophylactic project strategies or tools which at the early stages of a project are critical to minimising any adversatives to the project's success. The Merriam-Webster -1826 offers the legal definition of prophylactic (an adjective) as:

'designed or tending to prevent harm or wrong. e.g. a prophylactic rule against profiting from inside information.'

In the same light, throughout this study, anything that hinders change management requires

prophylactic measures to ensure they do not materialise to harm the process. Change management instruments are prophylactic in effect, designed to inhibit the ineffectiveness of change management and ensure success.

2.3. The Kurt Lewin (1940) model of change management

It follows from here; therefore, that just as scheduling, calibrating and planning strategies are the greatest prophylactics to project management success, so too are these crucial to the transformation of the change management process. As far back as the 1940s, the great guru of understanding organisational change, Kurt Lewin as advocated by Lawrence (1999); Burnes, (2004); Rune (2005); Rodell and Colquitt (2009); Kraus (2016); Turner (2017) presented a model which has been redrafted to include various shades informed by these sources and is shown in Figure 2.2. This model encourages that whatever change that has to take place, there are always three fundamental stages which need to be adhered to, and these are as follows:

1. The need to create the right environment (*Unfreeze*)
2. Execute and support a change to the desired state (*Change*)
3. Reinforce foundation to anchor change (*Refreeze*)

The Kurt Lewin model, if interpreted intuitively, seeks prophylactic measures that are ideal to an institution or firm. These are measures more suited to an organisation and therefore perceived as those peculiar, distinctive, sensitive, and thus atypical to the environment in which the organisation seeking change operates.

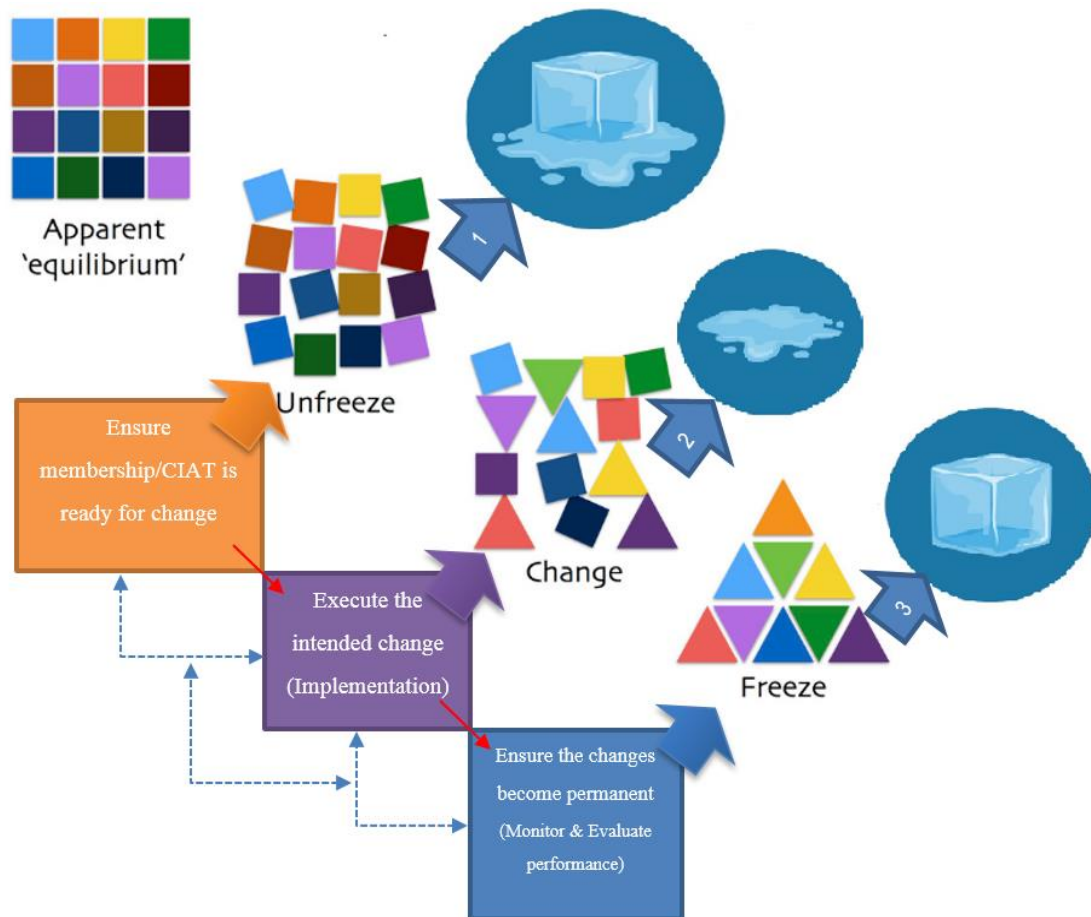


Figure 2.1: Adaptation of the 1940 Kurt Lewin Change Model

The Kurt Lewin Model of change management has been shown time and again as the most widely adopted and widely accepted model in change management (Turner 2017). An inspection of the model suggests after Rodell and Colquitt (2009) that the virtues of change management are that change, is a process any business entity responds to in order to mutate with its environment. The stages of the model are explained below.

2.3.1 The unfreezing phase

The model encourages the need to take a surgical review of the current status and as Burnes, (2004) insist, to be prepared to question the business *modus operandi* and so ensuing all participants take part in unstrapping the deficiencies (endogenous-factors) within the organisation. This is the unfrozen, i.e. readily consulted (Muller et al. (2011) and that any

change-drivers such as technology, laws and statutory demands are reshaped to ensure they are all-embracing and encompassing to prop up the response process to organisational or institutional change management. This stage is important because it is the stage of inward-looking and admitting that change is needed. It comes from the loss of direction and inability to meet the needs and wishes of the customers and stakeholders and recording very low-profit shares or margins. The age-old rules and business procedures may have to be revised. Sometimes this is the stage when specialist companies are established. As the chef, Golden Ramsay kitchen meltdown might suggest, that no matter how painful, and how tearful, the chef knows it may be brutal honesty in pointing the failures, but it is the panacea, the foundation to finding the prophylactic measure/medicine to cure the present situation (Ramsay, 2010).

2.3.2 The change phase

The second phase in the Kurt Lewin model is the change phase itself. Once the organisation comes to terms with understanding what needs changing, alerting everyone to know what needs to take place is important. This should involve appointing leaders or managers to execute plans for change and to ensure these are followed through. At this stage, it may be critical to ensure that mentorship is provided so the implantation can take place and that everyone is involved. This is a crucial phase because the actual measures are executed, and the effects of the change become apparent. It may include job losses or selling off assets or branches of the organisation that are seen not to be of value.

2.3.3 The refreezing phase

The third and last phase in the Kurt Lewin model is the refreezing phase. This is the stage when the changes have to be locked in. The internalising of new concepts and meaning take place, and the strong internal drivers (endogenous factors-within) are notable (Cameron and Green, (2009). Aiken and Keller (2009) have also observed this to be the stage when the set performance indicators are monitored, and an eye on the profit margins is maintained. Burnes (2004b) has maintained that this third step is the stabilising part of the model in that it seeks a new equilibrium so that established business patterns or processes are cushioned from regression. This would seem to make a lot of sense because if the third step is a point of realising all the measures that brought about change, the dynamism of imported ideas and the investment in starting afresh imply that an organisation can ill-afford to elapse in its invested time and people's new minds and behaviour as these too are as important as the final resulting effect of change (Buchanan et al., 2005).

As a final stage of the Kurt Lewin Model, cognisance must also be given to ensuring that a platform to prepare for new ideas is allowed for so that any new ideas have readymade holes through which looking backwards can be entertained. After all, Kotter (2008) himself argued that reverse attention has the tendency to over amplify the not-so-obvious; implying it is inherent in humans to use hindsight to prepare for the next phase, but that often this is done in punitive ways because the mind knows what failed and typically brutal in self-accentuating what could have been.

The old saying that '*Hindsight is a wonderful thing*' comes to mind. Indeed, Aiken and Keller (2009) have retorted that because the thinking after an event has passed is always different, human actions after an event or experience are always different. According to them, this is

because a mind knows more, thinks better, and post an experience; all human beings behave differently. In the light of this the last phase of the Kurt Lewin Model is also the right stage to prime up the stakeholders, shareholders and employees because the leaders know effectively what has worked, are better prepared to defend their new actions based on new-knowns (Proctor, 2014). It is a confidence-building stage when everyone is ready to register their contribution. It is also the stage if not carefully handled, the doubters (who are most resistant to change) are ready to be proved wrong.

2.4 The transformation of change through the interpretation of the world

The extent to which the employees of an organisation perceive the need for change management leading to extensive coverage on consultation has been espoused by Lawrence (1999); Rune, (2005); Burnes (2004a) as a critical success factor. Equivalent to the phase 1 of the Kurt Lewin model, the existing environment in which an organisation finds itself entails that the pursuit of change can be described as a derivative of the decisions, taken consistently in small ways and in small steps or in one swift swoop – the step change.

2.4.1 The Incremental change model

This is the type of change that takes place steadily yet incrementally (Piderit, 2000). As shown in Figure 2.2, (after Mento, Jones & Dirndorfer, 2002) perceive incremental change, is equally difficult to tell, especially where the changes are kept subtle, understated but planned over a more extended period of time. Most writers have qualified this as the most sensitive way of embracing the views of everyone on the shop-floor. It is more effective in responding to the interests of the many – the environment - in which those seeking change operate or live (Mento, Jones & Dirndorfer, 2002); (Burnes, 2004b; Rune, 2005).

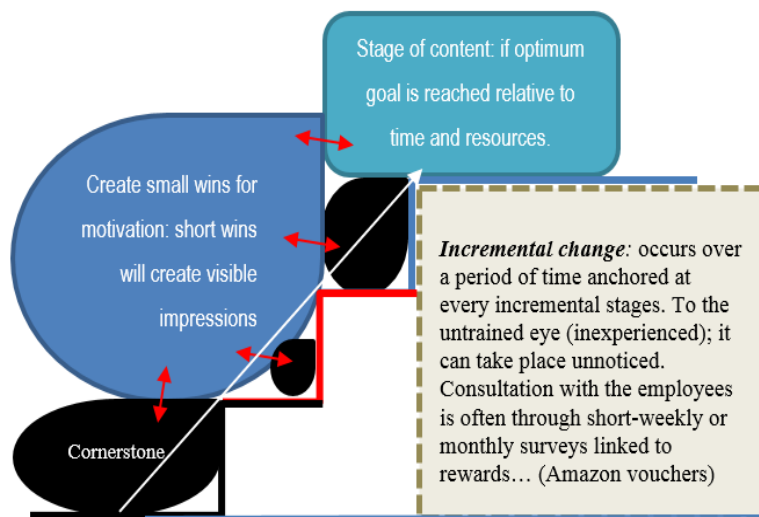


Figure 2.2: Incremental type of change processes (Mento, Jones & Dirndorfer, 2002; Burnes 2004)

There are serious concerns with the incremental approach because the paradigms and principles of organisation change take place over a prolonged time and therefore derived from a build-up of small snippets of business decisions, (perhaps taken by a few executives), there is thus always the danger that the incentives for change management appear disjointed Koval and Kuppens, (2012).

Where the product of change is difficult to implement or requires heavy investment or perhaps, a steady investment in manpower training especially where skills shortage may imply relying on improving the adroitness and dexterousness of employees, then the incremental change is the most perfect means of effecting change (Cameron and Green, 2009).

The incremental change model is not without its critics. Burnes (2004b) refers to Rodell and Colquitt (2009) who appear to caution about all-out acceptability that the model will apply whatever the circumstances (Stacey and Dunphy, 2001; Runes, 2005; Metre, 2009). Rodell and Colquitt (2009) agree, in part that the model is clearly designed to suit any situation, but they insist that it is heavily skewed to profit-orientated customer-facing organisations. In light of this,

taking the position that Rodell and Colquitt take, it is easy to be adamant that the model can relate to professional organisations such as CIAT, RICS or CIOB. This position would seem to align well with Kitapci and Celik (2013) that it is not practice-friendly but more appropriately suited to ambidextrous organisations with two main distinct functions where under each function there may well be several entities, subsidiaries or branches that are mandated specifically to deal with a specific area of interest.

It would appear, therefore that the incremental model is more applicable to organisations that are not radical, such as parastatals (half run by the government and the private sector). Nevertheless, Burnes (2004b) argues against these criticisms stating that the disaffection appears to be more focused on ‘speed and not otherwise on the magnitude of change’ because in Burnes’ opinion when given time, it is often the incremental change that leads to radical transformations. Burnes (2004b) goes on to qualify that the incremental model does not merely refer to ‘tangible or physical space-change’ but to the ‘human emotional aspects’. This emotional-centric change management steers in the direction of human (both individual and group behavioural) changes, is correctly defined to apply to organisational-settings as they are not isolated from human capital and the effects of their decisions to the society in which they serve.

2.4.2 The Step change model

The next change model is the one advocated by Mento, Jones & Dirndorfer (2002) which they termed: *step change*. This model depicts a set of conditions which are mostly exogenous to a profit-oriented entity. As shown in Figure 2.3, the changes may be forced through in order to either maintain its own reputation or standing in the Financial Times Stock Exchange - FTSE 100 Index (which is a listing of the top 100 companies on the London stock exchange based on their highest market capitalisation) as an example.

When firms of this nature anticipate some turbulence, they instinctively want to make changes.

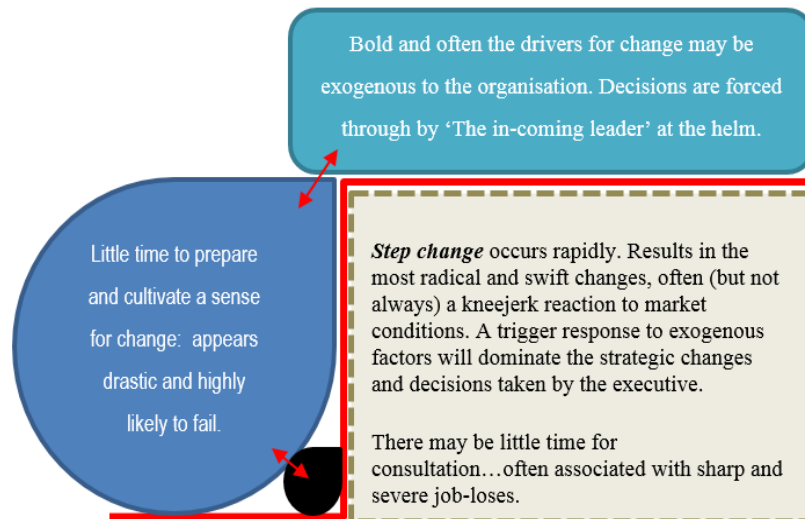


Figure 2.3: Step Change Model (Mento, Jones & Dirndorfer, 2002; Burnes 2004)

Further inspection of Figure 2.3, shows some examples of step-change which include Sony's when the chief executive, Kazuo Hirai, took over the institution, he made it very clear that cultural change would be one his top priorities and stated that "*Sony Must Change; Sony Will Change*"

"Cultural change was just one part of Hirai's strategic agenda, alongside some tough decisions about the scope of Sony's broad business activities. But, at the heart of the challenge facing Hirai is a culture at Sony that has led to the business losing its market-leading reputation for innovation. Not for nothing is Sony often referred to as the "Apple of the 80's" (Riley, 2015,)

The step-change model is one in which the changes are introduced particularly from a sudden shift in the technology or following some predicted market trend, such as the arrival of other fierce competitors. The environment for continued survival may, therefore, change so swiftly that kneejerk reaction may be unavoidable. This is often associated with drastic measures which may result or lead to other potential like-to-like organisations taking similar radical or step-change measures. Amid this type of change, the resulting effect tends to be drastic and can be very emotional for the employees that are caught in the whirlpool of change. Knowing that emotions can run high the new CEO of Microsoft, Satya Nadella, on the 14th of February 2014

sent an email in confidence thus:

“Our job is to ensure Microsoft thrive in a mobile and cloud-first world..... many who know me say I am also defined by my curiosity and thirst for learning. I buy more books than I can finish. I sign up for more online courses than I can complete.I fundamentally believe that if you are not learning new things, you stop doing great and useful things. So family, curiosity and hunger for knowledge all define me....I am here for the same reason I think most people join Microsoftto change the world through technology that empowers people to do amazing things”.

Elsewhere, Addeo (2013) has made reference to the Sociologist theorem developed in 1928 by William Isaac, Thomas and Dorothy Swaine Thomas. The trio is said to have deduced that any interpretation given to a prevailing situation often results in action of some sort. In other words, it doesn't matter what the perceived threats CIAT has about its broad membership - (or at worse, other competing institutional bodies) - it is the extent to which the membership itself, perceive the performance of CIAT and how it then compares to their own view of the performance of other organisations such as: the Chartered Institute of Building – CIOB and or The Royal Institution of Chartered Surveyors – RICS that these two other competing institutions can be seen to provide better and broader fringe benefits to those offered by CIAT. Supposing this position was to be the case, then the Thomas theorem will manifest as:

“If men define situations as real, they are real in their consequences.”

The interpretation of the above is that if within CIAT, there were real concerns about the position of its relationship to its broader membership, the institution would be best positioned to seek to introduce changes which respond to the demands that the broader members want or may seek elsewhere.

2.5 The Kurt Lewin Force Field Model

In 1951, Kurt Lewin developed another model which used the organisation change as an organism metaphor. This widely quoted model examines and considers the causal-drivers for accepting change and how these are distinct to those which contrive to resist change. As shown in Figure 2.4, the underlying principle is that the model splits problems that any business may have to resolve first into forces for and against change. Invariably, for any change to succeed the driver-forces must outweigh those likely to be the resisting forces in any situation where there is impending change. Where there is an equilibrium between the two sets of forces, change will not materialise. Simply put: *in order for change to take effect, the driving force must exceed the restraining force.*

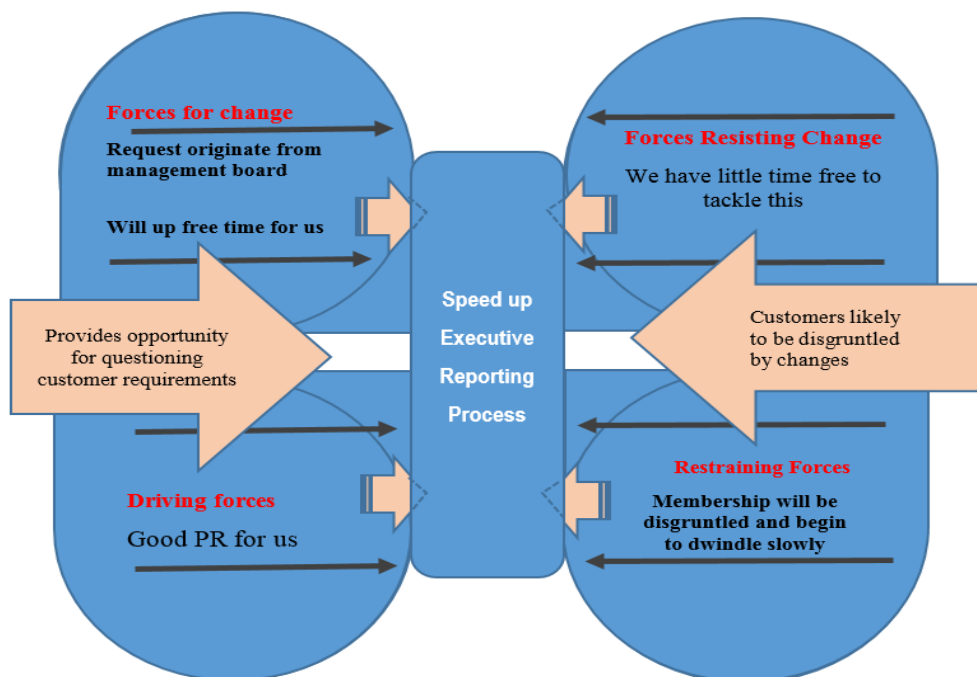


Figure 2.4: Kurt Lewin's -1951- Force Field Model (Source adaptation, Cameron & Green, 2019)

As shown in Figure 2.4 should an executive manager decide to streamline the efficiency of the reporting process, it is either that the driving forces ought to be intensified and strengthened, or the resisting forces decreased for change to take place. At worse it may be that both forces should take place but in equal magnitude. As an example, if it is that the executive intends to

improve on the membership recruitment, then the committee or task force responsible will have to be given time and resources to ensure their efforts are negated by lack of time and capital to support the necessary demands placed on those going round the country to boost membership for CIAT. It might also mean spending some time to talk to existing members and ensuring that their expectations are managed. If any incentives, as part of the changes brought in to improve, appear to favour the new members, then the old membership may feel disgruntled and become less keen to extend their membership. This model is critical in that it acts as a reminder that changes must be unfrozen and once the membership is consulted and informed. Measures are already articulated then the changes can be introduced (effect change) and then frozen to allow the changes to have their impact.

2.6 The anticipatory justice for change

Leading researchers in the field of emotional inertia (Shapiro, and Kirkman, 1999); have all raised concerns that employees are more averse to change (Koval, and Kuppens, 2012); and likely to offer resistance (Rodell and Colquitt, 2009) if the conditions for change are not clear. This is another locus point of a reminder that in any organisation, leaders come and go and this in itself, is change. Employees loyal to an organisation where so many leaders come in and go are likely to stay and offer their service to the firm; however, in that period of tenure, they will more likely experience large-scale changes such as a firm deciding to relocate from the UK to Asia or from London to the North-West (as has been in the case of BBC and ITV) all because each leader brings with him/her a package of measures which represent their view of the world and the organisation they have to lead.

Piderit (2000) contends that rather than offering inherent resistance, employees' will take anticipatory measures in readiness for change. Piderit (2000) is clear too that often a perception of justice takes precedence by expecting nothing short of full consultation taking place in order

to avoid resistance. Sharpilo and Kirkman (1999; and 2001) introduced the *anticipatory justice* construct to represent such perceptions. At the back of this, anticipatory justice (as in the case of this study) is likened to expectation by the membership of CIAT as to which type of change they are more likely to respond to positively: the incremental change or the step change? Management intending to engross in the process of change management should have their wherewithal of anticipating, which of the two will have less negative consequences. Anticipatory, as an adjective, conveys the notion that change is emotional and that justice or fairness has to be seen to prevail. In the case of this study, it is the membership of CIAT (if not fully consulted) that might feel a sense of injustice and thus resort to giving resistance; this is what Sharpilo and Kirkman (2001) have objected to by insisting that any change management process should carefully anticipate the mood in the organisation and how employees are likely to react to any attempts to introduce immediate and drastic step changes.

2.7 The premonitory emotions associated with an impending change

Writers such as Bell, Ryan and Wiechmann (2004; 2006) have confronted perceptions that appear to suggest that change is organic (Burnes, 2004; Mullins, 2002; Wacławski, 2002) inevitable (Smith, 2001; Cranall, 2003) and should be expected by employees to take place (Rune, 2005). Bell, Ryan and Wiechmann (2004; 2006) contend by putting forward constructs which emphasize the benefit towards organisations which take an anticipatory position about the effect of the change on employees and the lasting impact of change. In this instance, Hannagan (2002) and Rune (2005) have opined that it is sensible to ensure that those likely to be affected by the change are adequately consulted, and at the very least, their views are allowed to shape the change process.

In support of the same motion, Burnes (2004) and Carnall (2003) exalt this very issue of

consulting the employees as the recipients of change. Hannagan (2002) insists that if a platform is created where the beneficiaries have some influence in the outcomes of a project, then resistance to change may only come from the hard-core but likely to wean off quickly. The antithesis to this is that the emotional effect of change leaves employees feeling not worthy of being consulted. Smith (2001) warns that given the debilitating and psychology effects, this can leave, especially on the shop-floor, who are more likely to be averse to executive commands, the feeling of being undermined and not worthwhile to the causes of the organisation are known to result in resentment – which is a well-recognised trait and trigger of resistance to change (Waclawski, 2002).

While it seems there is sufficient consensus that consultation with the end beneficiaries yields positive change outcomes, Rune (2005) has espoused the added-value concept. Rune maintains that when change management is managed as a continuous process of reviewing an organisation's direction, or structure and its capabilities, it responds better in the way it serves the-ever-changing needs of employees (as dictated by both, exogenous and endogenous environmental factors). Rune (2005) further acknowledges Burnes (2004), who defines change as an ever-present process which for any organisation, shapes what happens at the operational and strategic levels.

In reappraising the Lewin Kurt's change management model Kanter (1989) diffuses the fears often associated with change, citing examples which demonstrate that whenever the pioneers for change management succeed, it is often observed later that the pioneers too, will have learned to dance the masterly of change management. It is, therefore, noted with interest that a correlation might well exist between the process of change, and the understanding and desire to change. Consequently, any organisation must begin its journey to change by, first of all, understanding the drivers for change, as well as anticipate readily, how the masses or employees will receive

the intentions as the executive. This premonitory or precognitive tendency among employees (or in the case of CIAT, the membership) conjures up negative feelings about the outcomes of the change process. It can be avoided if an organisation acquires the tools necessary to realise positive change. Meanwhile, cognitivists such as Kurt Lewin, long believed believe that if the employees are not consulted or given sufficient information on organisation change, they also become more sceptical and entertain prolonged premonitions, especially about job losses. Harvard Business Review (2018) also elevates job-cuts, as atypical of the concerns employees will have premonition about.

The Association of Project Management APM (2018) endorsed this point and dedicated a series of Continuing Professional Development - CPD events to it: focusing on the '*Principles of Good Change Management*'. The APM likens the whole process of institutional change as bound to fail if it is not closely aligned to the institutional strategy and vice versa. The APM (2018) retains the invisibility of its argument when it states: 'the motivation behind every organisational change is to maximise business outputs, and through a highly skilled membership it is prudent management for the executive team to show leadership and ambition by leading from the front and engaging fully on with its employees so that they too are locked-in when making key decisions about their organisation's future. Graetz and Smith (2010) agree with Burnes (2004) who goes as far as suggesting that at the backdrop of increasing globalisation and deregulation, are the disconcerting voices for unfairness, equal pay, etc. and the rational to consult and engage with the employees serves right for both camps.

Waldersee and Griffiths (2004) are quick to remind readers that not every organisation has a given entitlement to successful change management; to remain competitive, they insist, any organisation should be doing its best to attract the best professionals as well as being aware of

the constant shift in the transient nature of the skills sets associated with its core business or corporate functions. Rune (2005) is adamant that very few successful global leaders would dispute the fact that positive change management is only as good as the adroitness and adeptness of the executive ushered in to lead the rest of the employees through the process of change.

2.8 The Exogenous and endogenous drivers of change management

Dasborough, Lamb and Suseno (2015) have alluded to the fact that there is no shortage of examples of successful change management processes. Given that need for change is sometimes unpredictable, some organisations adopt a reactive position. In such a case the driver for change may also be linked to global factors (exogenous), as the case of TATA Steel, when the sudden decline in the value of the price of steel also affected the value of British Steel (APM, 2018). This distinction persists even in the case of CIAT (2006) whose continuous decline in the membership and the ongoing concerns about the age gap of the membership are classic and to a greater extent, exogenous to CIAT. The resulting impact can be compounded further if the instruments within CIAT are not created to negate such external factors.

It follows, therefore, that depending on the nature of the decisions taken or the lack of action on the part of the CIAT executive, the consequential effect and profound damage can be an organisational factor. If internal decision making structures are put in place, then CIAT's preparedness to anticipate the impact of such factors is only as good as the prophylactic measures analogous to the internal adroitness of the executive of CIAT (i.e. if measures are already in place, this position is referred to as *Existential Endogenous factors*). Making this distinction is acknowledged by Burnes (2004) and Rodell, and Colquitt (2009) when they acknowledged the emotional impact of change and the need to strike a balance between the external (exogenous) and internal (endogenous) factors which goes some way in understanding

the relevance of the internal structure and its relevance to ensuring the drivers for change are known to the organisation.

In the case of CIAT, as early as 2005 calls were made for the institution to be more forward-facing to society by further broadening the services and support structures, it offered to its grass root membership (CIAT 2006). Revising routes to membership was seen as one way, and new definitions for a Chartered Architectural Technologists - MCIAT as well as the Architectural Technician – TCIAT were identified in the CIAT (2006) report. These were seen to be higher on the agenda of the main ongoing concerns for the institution.

2.9 Ambidextrous: The degree of the scale of the organisation seeking change

The extent of the organisation remains an important driver and success factor to organisational change management. Carnall (2003) and O'Reilly and Tushman (2004) have expounded this construct as:

“Ambidextrous organizations encompass two profoundly different types of businesses—those focused on exploiting *existing capabilities for profit* and those focused on *exploring new opportunities for growth*. The two require very different strategies, structures, processes, and cultures.” (O'Reilly and Tushman, 2004;).

This definition points to the fact that on the one hand, a firm can intrinsically choose to be profit-oriented and in which case its structure should dictate and be set out as such; and on the other hand, an organisation can set itself to predominantly explore areas of emerging opportunities and generate the necessary growth that way. This ‘within-two tier’ system is not often distinct, and most organisations end up doing both. In the case of CIAT, being a *not-for-profit organisation*, the latter option appears the more fitting.

O'Reilly and Tushman (2004) have conferred their thought in noting that one of the toughest of all challenges in leadership is where demands are placed by the shareholders and owners that an

organisation should pursue all possible novel prospects even though an effort to assiduously develop talent as well as attract the most experienced expertise with the much-needed competencies are not matched by the resources made available for this. O'Reilly and Tushman (2004) retort that this scenario often leads to many companies not being successful.

O'Reilly and Tushman (2004) further insist that it is the case that the successful businesses are the ones that are adroit at enhancing their present-day offerings, yet they would not hesitate when it comes to investing in revolutionary and profoundly novel products and services. They give an example of Kodak and Boeing as just two of the more recent examples where once-dominant companies, these two failed to adjust to market changes. Kodak outrivalled competitors at analogue photography yet failed to make the surges in another niche market of digital cameras. In the case of Boeing, for a long time, a world-renowned pioneer in commercial aircraft felt the need to undergo a shifting change into defence weaponry, but the lack of resource impetus meant contracts dried up and the organisation stumbled amid stiff competition from its rival, Airbus.

2.10 The metaphors of organisational change management

When comparing various processes of change management, Beech and Macintosh (2013) have defined management as 'the continuous process for renewing a company's entire framework, direction and resources needed to meet constantly the needs of the economy, the customer as well as staff'. However, Kraus (2017) in his doctoral thesis admits that there are many conflicting assumptions of change and change management which all go to confirm the large volume of research and broad interpretation that can be held.

D'Ortenzio (2012) has noted that the obsession with defining change at individual level appears to be driven by the fact that a larger organisation is also a sum of individuals that make up the

organisation. Likewise, the Harvard Business School (2018) describes organisation change as a constant process and change management as people-centric. Organisational change appears more inevitable because it is the sum of the decisions, all of which are reflected by the collective response of individuals within an organisation. It is the people, workers, membership that contribute to change.

Organisations can be characterised as having to go through quite distinct milestones compared to individuals. Cummings, Bridgman, and Brown, (2016) have thus observed that it is the case that individuals may declare with certainty that in five years they ought to have finished paying off a mortgage, whereas a company can easily set targets (*planned change*) and use their sufficient resources to apply all actions necessary to bring about the necessary change. An organisation may even decide to recruit a group of individuals with different skill-sets which it sees as being vital to fulfilling the intended targets set for the organisation (*managed change*).

Cameron and Green (2009) optimise the use of metaphors as critical to the definition of organisational change management. Some literature refers to organisations as though they are meant to be machines. Cameron and Green (2009) insist that the use of metaphors leads to descriptions such as ‘organisation structures’ ‘Job design’ and ‘process engineering’. They go on further to suggest that some definitions of organisation change management relate to the same reference of political systems. Bevan (2011), for instance, refers to organisations as ‘a seething web of political intrigue where coalitions of interests are formed and exercised, and power rules seem to be supreme. Bell, Ryan, & Wiechmann (2004) refers to competing organisations as ‘hidden agendas’, often with opposing factions who will close on each other to gain an advantage. Sometimes, the media is used to wage a commercial war against each faction, and in doing so, there is a lot of political manoeuvring.

Yet again, despite what Cameron and Green (2009) suggest, it is still the case that the interpretation threshold and context are drawn to that of an individual. Albeit:

Metaphor gives us the opportunity to stretch our thinking and deepen our understanding, thereby allowing us to see things in new ways and act in new ways... Metaphor always creates distortions too... We have to accept that any theory or perspective that we bring to the study of organization and management, while capable of creating valuable insights, is also incomplete, biased, and potentially misleading (Cameron and Green 2009, page 98)

As Cameron and Green (2009) point out, the use and descriptions are contextual to how an individual defines an organisation and therefore, the transformation it ought to make to endure the process of change. What this implies is that when it comes to change management, the first point is, to begin with, the individual and then understand how individuals in a group will behave, which inadvertently represents the overall organisation. Management is about coping with complexity, individuals, by contrast, have to evolve and understand the reason for the change and prepare to evolve with the measures or demands place on them.

2.11 Summary

This chapter has discussed the phenomenon of change, presented in the overview of the literature on change management, the purpose for change, conventional and well-established models of and methodologies adopted throughout on change and management. An ontological perspective was presented which attempted to address some points at issue such as why do humans have the capacity and the tenacity to seek change. A view was generated that this comes from the desire nature of human beings and the transformation to which humans are subjected to on a daily basis. Such monotonous occurrence of events or activities leaves us being able to predict outcomes which in themselves can bring us to a point where we start to seek to do things

differently, i.e. change. Following on from this, the chapter presented the Kurt Lewin's step change model which stipulated that change is processual and begins first by understanding the present, seek to amend it (unfreeze) execute the measures necessary (change) and then freeze (lock-in) the measures to ensure the desirability of change is affected. From this perspective, change was understood to either be incremental or sudden, and the emotional effects which both modes would present were outlined.

Incremental change was also considered to be subtle and gradual and might occasionally manifest without individuals even noticing the real change that has taken place. Step change was generally perceived as being radical and often associated with terms such as 'revolutionary' or discontinuous, which implies the need for an organisation to cease their old practices and start something anew suddenly. A step change often needs a very robust and coordinated programme that is well thought through and proven to yield greater benefits. It also emerged that step change being radical was considered to be heavily emotional on the recipient employees as most of the times the news of their organisational change is in the media and thus driven by external forces and therefore exogenous to the business or entity.

It was also learnt that for change to be effected, in a not-for profit-organisation, anxiety and morale have to be managed in such a way that they do not impair the sound and already operating sections of a business. This implies that the sections within an organisation that are perceived to require the most attention must be identified; this means that clear goals and strategic measures must be set and these should be seen to address the very issues for which change is needed. This means that these have to be seen as prophylactic measures that are necessary to allow shareholders, stakeholders and the larger membership to readily key into some of the decisions made.

The chapter also identified a need to be prepared to understand that for every driver-factor of change, there are mutually exclusive factors that may also offer some resistance. It emerged that in order for change to occur the driving force (*desirability*) must always exceed any restraining force (*negating factor to increased desirability*). In conclusion, it must be stated that the literature on change and institutional/organisational change management has helped the study to generate conceptual challenges, paradigms and metaphors which relate to both practice (industry) not for profit organisations and establishments that are ambidextrous in their makeup or structure. It is clear from the literature that the board membership, who are the recipients of the prophylactic changes should take the centre of the change process; they should never be excluded from the process as their contributions are invaluable to the whole process of institutional change management.

In the next chapter, the discussion will revolve around the rational of methodological approaches associated with institutional change management and therefore how the CIAT could affect the changes needed to bolster its membership numbers which are very critical to the survival of the institutional going forward.

3.0 Research methodology

3.1 Introduction

A primary problem of this research goal was the lack of published literature, data and empirical findings relating to change management in professional institutions in the UK. Consequently, a robust research design was required underpinned by sound methodological and philosophical choices to provide comprehensive, relevant, current and reliable information for developing a conceptual framework for managing institutional change for a professional body such as the Chartered Institute of Architectural Technologists (CIAT). This chapter, therefore, sets out the research methodology adopted for the present study.

3.2 Methodological and Philosophical considerations

Given the aim of the study and the objectives, the methodology and philosophical paradigms needed to offer a means of appraising the constraints, drawbacks and shortcomings that the case study organisation, CIAT, has had, and continues to endure in its attempts to identify the factors unique to the Institute that is likely to drive the agenda of institutional change. The extent to the broad membership of CIAT also required an approach that would present views of both local and international members.

The methodologies, paradigms and ontological positions took account of the need to identify existential factors contributing to increased recognition of the priorities for the institutions as well as the areas likely to offer the greatest resistance towards institutional change. According to Egbu (1996), a social scientist is faced with a variety of options for data collection. Saunders et al. (2009) identify that there are four paradigms associated with research. These are positivism, constructivism, pragmatism, and transformative. Other authors identify alternative paradigms such as post-positivism. These philosophical aspects remain hidden throughout the research but

exert influence on the choices and direction of research, and indeed the final knowledge claims that can be made by the research (Creswell, 2014). Consequently, they must be understood, and the specific orientation of the research must be clearly defined.

It has been observed by Creswell (2014) that positivism adopts a deterministic orientation in which a “scientific method” defines how research is done. It is considered reductionist in nature as it tends to reduce ideas into small discrete variables and hypotheses that are tested or verified during the course of the research. The accepted approach to research is to begin with a theory, collect data to test the validity or otherwise of the theory and then adjust the parameters of the theory before further testing is undertaken (Creswell, *ibid*). The limitation of this worldview in relation to this study was its reliance on the existence of theories that could provide a framework for empirical testing.

Constructivism, on the other hand, seeks a subjective understanding of the world in which the researcher lives and works, and is therefore concerned with the ‘bigger picture’. It assumes a relativist position in which realities are multiple and are constructed in the mind of the individual, rather than being an externally singular entity (Creswell, 2014). A fundamental weakness of this paradigm is that the knowledge constructed cannot be universally applied due to its subjectivity.

Pragmatism has seen an increase in its adoption in social science research. Unlike positivism or constructivism, pragmatism focuses on the size of the problem and therefore considers any available tools to achieve the desired outcome. In simple terms, pragmatists are not committed to any philosophical system but choose appropriate research approaches depending on what is considered expedient at any particular stage of the research (Cherryholmes, 1992).

These philosophical worldviews are aligned to the different research strategies. For instance, quantitative research is developed under a positivist philosophy, while qualitative studies are aligned with a constructivist worldview (Creswell, 2014; Kumar, 2014). Pragmatism, however, gives more freedom in the choice of methods, techniques and procedures of research, and frequently results in the adoption of a mixed-methods approach (Creswell, 2014).

Given the objectives and aims set by this study, pragmatism was the dominant paradigm of the research with a mixed-method approach being adopted. This allowed the researcher to synthesise and analyse data gathered by a variety of techniques in order to generate further ontological perspectives. According to Cameron (2011), pragmatism enables the researcher to solve practical problems for the real world. The research design, including statistical manipulation and the reasons underlying the choice of data variables and any transpositions, are discussed in greater detail.

3.2.1 Ontology dimension of this study

Crotty (1998) explains that ontology is the study of being, and thus ontological assumptions are concerned with what reality also presents. It presents the researcher with the opportunity to take a position of objectivism or subjectivism, and to make this known (Crotty, 1998; Saunders, 2009; Scotland, 2012), particularly for this research, in relation to the nature of change and how it unfolds in practice. Arguably, whilst the nature of change is subjective, its manifestation in practice can be represented or captured objectively. This clearly aligns with a pragmatic worldview.

3.2.2 Epistemological dimension of the study

Epistemology concerns the relationship between the researcher and the researched (Creswell, 2014). The organisation under study has a membership that has to be consulted on as many of the proposed changes as possible as this will affect individuals who have to exist with the

consequences of change. The researcher, being a member of this organisation and therefore, fully involved in the change process - as no change can be fulfilled without the full involvement of the membership - is not entirely independent of the research. However, in trying to understand the forces of change, the researcher is able to take a more neutrality perspective, also allowing for a more pragmatic approach to the research.

3.3 Advocating for a mixed research methodology

The researcher for this study needed to combine the benefits of the research dimensions identified in section 3.2: assuming a positivism and deterministic orientation to research by being immersed fully in the process and as former President of CIAT also take a constructivism approach – i.e. looking from within – yet taking a pragmatic approach to proposed initiatives and solutions and listening to the broader membership. Given that the researcher set out to investigate the extent to which the broader membership compared in the ranking of factors that drive institutional change and to identify priority areas for change and which areas they readily recognised as likely to offer the most resistance to institutional change, a mixed methodology was seen as the most appropriate methodology. The following sections and Figure 3.1 explain why, for this study, the mixed methodology was identified as the most appropriate approach for the study.

3.3.1 Qualitative method

As the study needed to identify a sample frame that captured all the designated members of CIAT in all the regions that make up the UK membership, a decision was made to interview and pilot research themes to members in attendance at various forums and workshops organised by CIAT. This was part of the researcher's ontological position of engagement with members, and in the researcher's capacity as the Vice President and President of CIAT this too turned out to be an informed approach of finding out more about the ongoing concerns among the broader

membership. With institutional change, the researcher felt that it was critical to the study if the broad membership could help to articulate what they perceived as:

- the key drivers to change
- value-desirability for change
- areas of priority for change as well as
- prophylactic initiatives

To investigate each of the research areas, seeking the opinions of the broad membership was essential. Thus one to one discussions and canvassing information from membership forums and future groups (refer to Figure 3.1) formed part of the sequential approach in data collection.

3.3.2 Sequential exploratory

The sequential design methods, also known as ‘Group-Sequential Tests’ or Repeated Significance Tests’ (Jeong, 2003; Hirde and Bhosale, 2018) are designed to facilitate content analysis, which in turns informs the next sequence of observations usually through repeat observation of similar groups. In the case of this study, membership forums and workshops and ‘future-groups’ formed a key part of qualitative research and thus enabled the study to identify areas of focus for the research. For instance, from the initial forums, one issue that dominated the members was the ease of access and widening membership to readdress the issues of dwindling membership numbers for CIAT.

3.3.3 Sequential explanatory

The sequential exploration explained above and depicted in Figure 3.1 enabled the researcher the opportunity to seek and receive explanations to issues associated with change management. This approach enabled the study to understand deeply what the patrons of the Institute, individually and collectively, recognised as key drivers, barriers, and priority areas for change management.

From the early stages, the content analysis generated opinion expressed through exchanges between participants, especially where critical thinking and argumentation identified points of convergence for drivers and value desirability associated with the change management process.

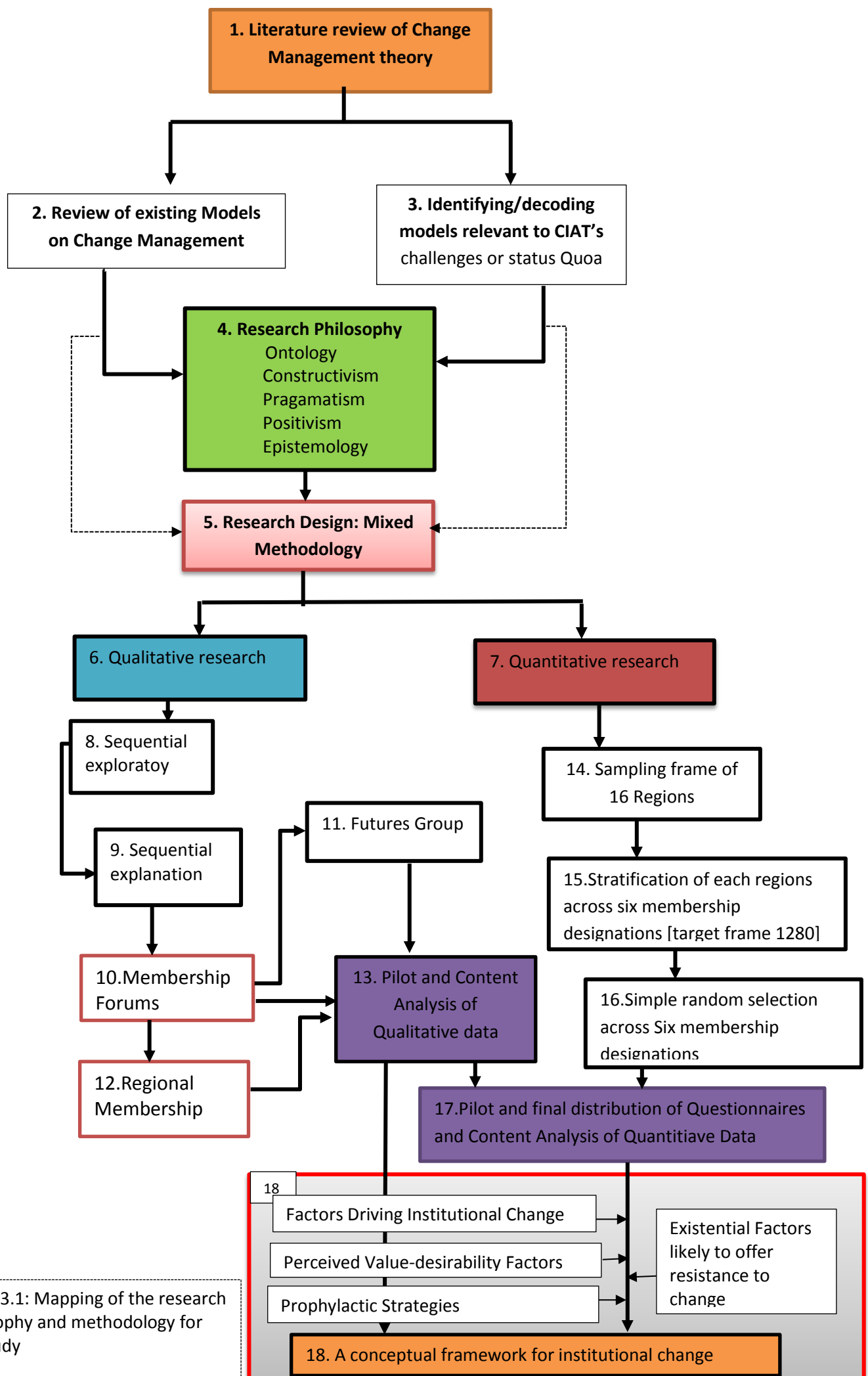


Figure 3.1: Mapping of the research philosophy and methodology for the study

3.4 Identification of the population, sampling frame and sample

The study set out to examine the impact and relevance of various factors understood and recognised as indispensable to the design of a framework for managing institutional change for CIAT (the focus of this study). It sought to assess these existential factors impacting on a change to CIAT as perceived by the typical membership of CIAT. In a study of this nature, it was considered necessary to define a population which is homogenous (current membership to CIAT) and one which gives an accurate representation of different designations represented by the CIAT as a professional institution. The research intended to reach these participants using methods that were acceptable; chief to this being the stratification of the UK regional centres and ensuring that the representative designations are also captured. It is noted the regions were more likely to have a heavier concentration of the chartered technicians and technologist as well as the student populations, but this needed to be identified. Consequently, consideration had to be given to the impact of such designations or constituencies that subsists under CIAT. There are three primary reasons that justify the need to focus on exploring among the broad membership the extent of variation in the perception of factors driving institutional change and the extent of the agreement as to the value and desirability derived from institutional change. These reasons are:

- i. CIAT, as a professional institute has long recognised the need to address the dwindling decline in the membership of its most economically active age group. This is something that is exogenous to CIAT, and which all professional bodies have to confront. The CIAT notes that:

“These are challenging times for the CIAT and the membership..... we need to stimulate debate about the issues surrounding the current and future membership and to raise awareness about the effects of forthcoming demographic changes on the CIAT” CIAT, 2011b)
- ii. The period of this study coincides with the increasing awareness among chartered practitioners and among the executive of all the main professional bodies that the current

skills shortage the industry faces, reflects in membership and therefore as institutions, changing the approach to attract new members to the doors of the professional body is critical to the viability of the organisation. In particular, these concerns have been echoed by the CIAT executive when they stated that:

“the aim is to demonstrate clearly the impact of demographic changes on the CIAT membership over the next five, ten and fifteen years and as a consequence the resultant actions and priorities that are needed to sustain the CIAT as a chartered body, a business and an organisation representing those who work within the sphere of Architectural Technology”. (CIAT, 2011b)

- iii. The present executive readily recognises that these matters will never go away. Strategies that provide prophylactic solutions to these issues are needed and that such strategies will not sit in isolation of the factors imposed on the built environment. Evidence of this being an ongoing concern within CIAT which ultimately suggests that change is inevitable can be seen in the following statement:

“What can we learn from the other professional bodies within the Construction Industry in terms of similar demographics, issues, structures, strategies and plans? Many of these bodies have a broad base membership but few have a singular approach. Many of these bodies have alternative routes into membership and encourage reciprocity..... As the demographics within the industry are skewed towards an ageing workforce at one end and a shrinking younger group at the other end then the professional membership bodies are likely to become more competitive for members” (CIAT, 2018)

It is clear from the above that for some time now the challenge CIAT faces is in turning its fortune around in so far as broadening the membership is concerned. It is also the case that consensual change with full membership support would be in the interest of the institution.

In summary, the population for this study was, therefore, the entire membership of the CIAT. However, proximity and the ease of data collection from regional centres as well as other reasons discussed in sub-section 3.3 meant that the study excluded seven regional centres from the study for logistical reasons and also to maximise the homogeneity of the sample being drawn from a geographical location where the built environment conditions are similar (see Table 3.1). This left 16 regional centres which formed the basis for sampling.

3.4.1 Sampling techniques adopted for the study.

Data collection from the broad membership was somewhat restricted as it included collecting some sensitive personal information; as a result of the Data protection Act of 1998 permission had to be sought from the CIAT executive to ensure the information collected from the membership in the regional centres did not put the institution in jeopardy. Stratified sampling was adopted for selecting the final sample for the research. In this case, the population was divided into a number of strata based on specific features (Bryman, 2008). A proportionate number of members were then randomly drawn from each strata to form the sample ensuring that different groups of the population are properly represented in the sample, in order to increase the level of accuracy of the findings of the study. The operationalisation of this technique is discussed next.

3.4.2 Stratification of targeted sample

Respondents for the study were chosen from what could be described as a subset of CIAT's membership across all the professional designations in the UK and Ireland. The designations are shown in Figure 3.2 and appear to suggest that 56% of the membership are on non-corporate membership (Students - 22%; Profile - 7%; and Associate - 22%). Figure 3.2 also illustrates that the largest pool of the membership comes from the Chartered membership class, followed by that of 'Associate' and then 'Students' respectively. The random selection followed the initial

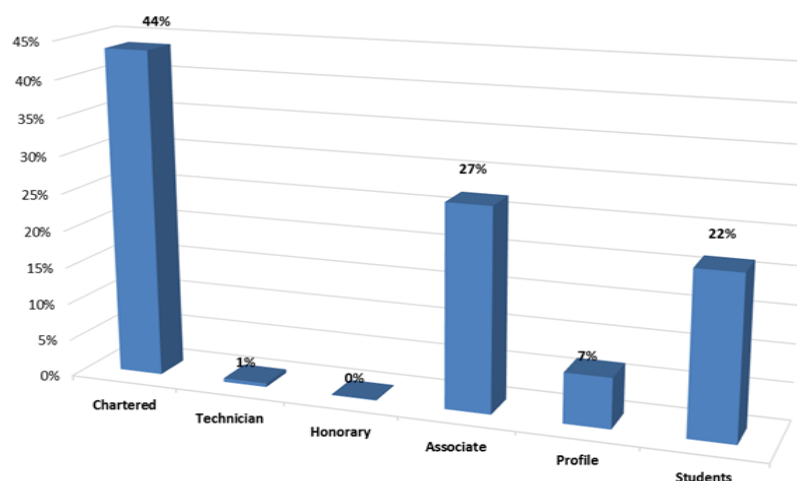


Figure 3.2: Proportion of membership by designation (source: CIAT Annual Review 2017-18)

stratification of membership listing addresses, based on the regional listing of the membership.

3.4.3 Using Regional centres as a proxy for stratification

CIAT is represented in 16 regional centres, all of which are in the UK. Other overseas countries have centres that are smaller both in terms of profile and level of activity. Apart from the regional centres, all of the overseas centres have up to a maximum of 80 members with the exception of the Republic of Ireland which commands in excess of 400 members. For this reason, a decision was made to exclude the centres from the study and to only concentrate on the regional hubs. The only exceptions were the inclusion of Ireland and the exclusion of the Channel Islands Region which only has a maximum of 80 members. The smaller the numbers, the more difficult it is to get an evenly balanced representation of all the professional designations. Therefore, in order to avoid having a sample that is skewed to one or two designations, a decision was made that any regional hub or centre with a profile of less than 100 members had to be excluded from the sample frame.

Stratification is a key methodological strategy to the study, as it allows for randomly selected respondents so that an accurate picture is obtained of what would have emerged from the study of the entire population of CIAT membership had been involved. Bryman and Cramer (1999) have posited that stratified sampling has the simple effect of allowing every member and professional designation in the targeted Region to have a specified non-zero probability of being included in the sample.

3.4.4 Benefits of stratified sampling

Fink and Kosecoff (1985), Gurney (1990) and Creswell (2007) have outlined the benefits and disadvantages to a researcher and the validity of the findings in having to choose a stratified random sampling technique as opposed, to say, a simple random technique. According to Fink

and Kosecoff (1995) as well as Creswell and Clark (2007), apart from minimising the chance occurrence of some parameters under a sample, further benefits of a stratified random sample are that:

- it can be more precise than simple random sampling by permitting the researcher to choose a sample that represents the various groups and patterns that characterise the main population of CIAT membership – the target of this study (King, Rosopa and Minium, 2010);
- the extent of heterogeneity within the regions, per designation or stratum as captured would be lost making the findings highly prone to error and may lend the results wholly untrue and unrepresentative of the membership population of CIAT; and
- the use of some statistical techniques requires that the values are taken from a randomly distributed dataset as it improves the chance or probability of generating parameters and inferences that truly are a representation of the population of the CIAT membership.

According to Hair et al. (1995), the disadvantages of stratified sampling are that:

- the method requires more effort than simple random sampling;
- often associated with a larger sample size than a simple random sample to produce statistically meaningful results; and
- the size of each subgroup (Region/centre) must exceed 20 to make statistical comparisons meaningful. This rule implies that for the five designations, a minimum of 50 was required for a centre or Region to be included. This rule further justified the exclusion of the centres from the study. Centres or regions such as the Channel Island, with only 80 members, if adopted, could have compelled the researcher to contact nearly all the members in the Region to take part. This would have been onerous and impracticable on two accounts: (i) First; the procedure would violate the process of randomisation and



introduce all the issues of taking from unrepresentative samples of CIAT membership. (ii) Second, it is difficult to state with certainty, that all the designations under CIAT (Table 3.1) would be well represented and to the same proportions, especially when, the membership numbers in the real population of some Regions or Centres are smaller than the resulting stratum shown in Table 3.2.

As can be seen in Table 3.2 the study's target of 80 per Region, is well above the twenty (20) person requirement set by Fink and Koesecoff (1985; 1995), Ponto (2015) and Judd, O'Rourke and Grant (2018) in their surveys on employee engagement.

Table 3.1: Number of members by Professional designation (ending May 2018)

| | Actual | % |
|--------------|-------------|-------------|
| Chartered | 3837 | 44% |
| Technician | 49 | 1% |
| Honorary | 12 | 0% |
| Associate | 2393 | 27% |
| Profile | 593 | 7% |
| Students | 1888 | 22% |
| Total | 8772 | 100% |

(Source: CIAT Annual Review - 2017-18)

| Table 3.2: Stratified random selection of CIAT’s Professional membership by designations per region/centre | | | | | | | |
|--|----------------------------------|---------------------------------|--|--------------------------------|---|-------------------------------|-------------|
| Regions/centres | Chartered | Technician | Honorary | Associate | Profile | Student | Total /regn |
| Northern Region (01) Over 300 | 20 respondents selected randomly | 10 Technician selected randomly | 10 Honorary selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Yorkshire Region (03) Over700 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| North West Region (04) Over 600 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| East Midland Region (01) over 600 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| West Midland Region (05) over 800 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Wessex Region (06) over 300 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| East Anglia Region (07) over 500 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Central Region (08) over 600 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Greater London Region (09) over 600 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| South East Region (10) over 800 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Western Region (12) over 400 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Scotland west Region (13) over 400 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Scotland East Region (14) over 400 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Northern Ireland Region (15) over 400 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Wales Region (16) over 300 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Republic of Ireland (C2) over 400 | 20 respondents selected randomly | 10 Technician selected randomly | 10 respondents selected randomly | 15 associate selected randomly | 10 Profile selected randomly | 15 students selected randomly | 80 |
| Total | 320 Chartered | 160 Technician | 160 Honorary | 240 Associate | 160 Profiles | 240 Students | 1280 |
|  | | | Targeted Sample of 1280 Designated CIAT Membership | |  | | |
| Below are centres excluded from the study and considered too small to derive any meaningful randomisation | | | | | | | |
| Honk Kong Centre (C1) 80 | | | | | | | |
| Australia Centre 30 | | | | | | | |
| Asia Centre (C5) over 30 | | | | | | | |
| Europe Centre (C6) 140 | | | | | | | |
| Northern Region (01)almost 60 | | | | | | | |
| Channel Islands Region (11) over 80 | | | | | | | |

3.4.5 The use of simple random selection technique

As before mentioned, the sample frame, derived through stratification resulted in at least 1280 members. These were chosen based on simple randomisation of respective participants according to the designated profession to which they belong. An inspection of Table 3.2 shows that this comprises of 320 Chartered Technologist; 160 Technicians; 160 Honorary; 240 students all adding up to a sample frame of 1280 CIAT membership.

3.4.6 Randomisation through Excel's 'Index' and 'Rand between' functions

The use of simple random sampling process begun by ensuring the listing was split per Region and by designation. Before applying the randomisation, within each designation, attention was given to ensuring the list was filtered and that names were not appearing in alphabetical order of surname or sample frames arranged by age/date of birth. As revealed in Figure 3.2, each participant was given a surrogate number generated from a sequence of old numbers listed between 1 and 233. This process, in the end, proved to be time-consuming. The next option was to use a computer-generated randomisation tool. This Excel generated tool generates a randomly selected entity using the **Index function**. A cell range (containing all the listed participants) is imputed in the formula box.

=INDEX(B2:B53,RANDBETWEEN(1,53))

The **typeset function**, shown above is a programming language which instructs *Excel* to select a random name from a listing of say 100 members. The excel index function (displayed at the top right side of Figure 3.2) will scan the rows from top and bottom and will pull out a random name. Pressing 'F9' or 'calculate now' function generates the next randomised name until the required number is reached. This procedure was perceived to be more flexible and the least likely to introduce researcher-type error or biases during the selection of respondents.

The benefits in handling stratification with the utmost care are highlighted by Kvanli et al (1992) and lately by Ponto (2015). These authors are unanimous that adequate sampling holds the key to accuracy in the descriptive statistics arising from the collected survey data.

In agreement with Ponto (2015), Gooch and Vavreck (2019) have also cautioned that if the intention is to surmise study parameters beyond descriptive statistics, it is important to understand the limitations of survey data. Kumar (2019) is also of the opinion that comprehensibility and unambiguity in the method of selecting respondents, the setting of objectives and research question go on well together to dictate what data is collected and what statistical methods can be deployed. A good story is as paramount to the credibility of a study's findings as to the researcher's awareness of the limitations.

In this study, due diligence and cognisance have been given to these cautions, especially in analysing the literature review, the ontology and epistemological aspects of change management which helped to inform the models around institutional change management setting of objectives, research questions as well as in the careful representation of the study sampling methodology. Likewise, the same issues shaped the data collection methods.

3.5 Ethical Approval

The method of data collection was approved initially by the University of Bolton, and on transfer to the University of Wolverhampton, CIAT insisted that they needed another complementary ethical approval process as stipulated by University of Wolverhampton Research Committee. As soon as this was approved, a covering letter which contained a brief description of the objectives of the research, the sponsoring institution, an introductory statement and basic definitions of terms and the benefits of the study to CIAT was produced. The covering letter was written on the University of Wolverhampton letter headed.

3.5.1 Methods adopted for data collection.

There are many methods open to a researcher for the collection of data. Kumar (2019) has grouped these methods under four headings, namely: opinion research; empirical research; archival research and analytical research. Gooch and Vavreck (2019) have demonstrated that it is impossible to say which method is superior in abstract terms and that each method has its strength and limitations. Kangwa (2004) further noted that the task facing a researcher is to assess each of them in light of the research objectives, the nature of the information required and the resources available. In keeping with the pragmatic orientation of the research, the data for the present study was gathered through a variety of methods. The first phase of data collection involved the use of qualitative methods, specifically one-to-one and group interviews which were conducted on change management with members of CIAT. This was facilitated by the ‘Vice President Education’ programme of the CIAT that provided a platform for engaging widely with institutional members. The bulk of the issues were thus introspective to CIAT as an institution, and it was revealing in many ways to note how vociferous and keen the broad membership were to be involved in the running of the CIAT activities. As President of CIAT, one of the initiatives set up was ‘*a critical friend panel*’, an initiative pioneered by the researcher that the Vice President’s office used to access feedback from the current membership. This feedback to the executive informed the direction the institution took on assessment routes to chartered membership, without which some of the insights would have been suppressed or remained unknown to the executive. It was also this insight obtained through the focus group discussions and one-to-one interviews that the author brought to the study in generating primary data. This data facilitated the design of the next phase of data collection that involved survey research.

3.5.2 Online questionnaires

In meeting the objectives of the study within the constraints of time and finance, an online questionnaire technique using google.docs was adopted for two main reasons:

- i. With this technique, it is suitable to cover a widespread sample, such as for this study which is drawn from the population of CIAT membership;
- ii. As a method of data collection in social research, online surveys have now outstripped postal questionnaires. They are relatively cheap, simple and easy to administer.

The main objective for choosing an online questionnaire approach to data collection was to obtain quantitative data critical to testing the research hypotheses and also to make comparisons with other studies adopting a similar methodological approach (Kumar, 2019). Moreover, an online questionnaire provides the opportunity to analyse data through a variety of statistical techniques (Bryman and Cramer, 2005).

The use of online and postal questionnaires as a method of data collection has, however, received criticisms from some quarters (see, for example, Burnes, 2004; Kerlinger, 1973). The technique is widely acclaimed to suffer from poor response rates, response bias, misrepresentation of meaning due to the wording of questions, as well as the inability of the investigator to verify the information provided by the respondents.

However, other writers have also fervently suggested that the shortcomings of questionnaires could be overcome by utilising a variety of techniques (Ponto, 2015; Judd, O'Rourke, and Grant, 2018). Primarily, the researcher must be aware of and endeavour to adopt techniques that should have the effect of increasing the response rate for the study. It was for this reason that online questionnaires were chosen; specifically, the ease with which they can be completed and sent back.

3.5.3 Design and content of the questionnaire

The literature abounds with many sources of advice on questionnaire design. Fink (2006) provides comprehensive advice on the whole process of questionnaire design, layout and use of postal and online questionnaires. Information gleaned from the works of these authors was found to be useful in the preliminary stages of the questionnaire design for the present study. At the design stage of the questionnaire for this study, guidelines from writers, such as Bryman and Cramer (2005), Fink (2006), and Ponto (2015) were noted. These sources have variously proposed five main issues worthy of consideration when designing an online questionnaire, namely:

- i. Defining the study objectives eloquently
- ii. Identifying the suitability of the population relative to the main objectives
- iii. Knowledge of the most appropriate sampling methods for the study
- iv. Anticipate the probability of non-responses to be high
- v. Take the considerable effort to pay attention to the wording of the questionnaire
- vi. Questionnaire length

Bryman and Cramer (2005) have pointed out that the temptation with researchers involved in questionnaire design, construction and piloting, is to want to cover too much and ask questions on everything that might turn out to be interesting. The evidence from the literature review suggested mixed perceptions over the effects of questionnaire-length on response rates. Elliott, (2005) for instance, argues after Burnes (2004a) that there exists no correlation between questionnaire length and lack of response.

Gooch and Vavreck (2019) have argued after Driscoll et al. (2007) that the most imperative factor in ensuring high response rates is whether the respondents perceive the survey as important to them and if it is of value both in the immediate and long-term perspective. Gooch

and Vavreck (2019) opine that a high response rate can be attained if the respondent is well knowledgeable about the themes and areas covered by the survey.

As for the present study, the matters under consideration are the need to develop a conceptual framework for managing institutional change for the CIAT. In doing so, it was necessary to understand how the broad membership compared in the ranking of factors driving institutional change. Considered within this discourse, is the extent of agreement and disagreement on the value and desirability of institutional change. It is also necessary to identify the existential factors (barriers) contributory to increased resistance to institutional change. In fulfilling these, understanding of what the members see as areas where more attention ought to be given will be of value to the findings.

3.5.4 Retest of the questionnaire content, reliability and validity

The questionnaire had to be tested among fifteen (15) executive members for its credibility as a research instrument. Furthermore, another fifteen randomly selected members of CIAT (in attendance at the Future Groups) forums were drafted in to undertake a short administration of the questionnaire. Although this exercise had been carried out previously during the piloting stages, this final stage ensured there were no more hindrances in the content, structure and scoring design of the research instrument. Once the scores were compared and ascertained, the members chosen to undertake the retest of the questionnaire felt that the ratings and wording were consistent and reflected as well as measured what was intended by the researcher.

Having retested the research questionnaire, and validated the issues raised with a colleague at an executive level, who largely agreed the issues raised were pertinent and relevant, the researcher felt reassured that the research instrument was practical and convenient and could easily be read, understood along with the use of rater scale. Indeed, Howitt and Cramer (2011) have argued that

any questionnaire must translate the research objectives into specific questions. In the present study, the members of CIAT supplied answers on 24 separate and specific questions. These questions were developed by the researcher and checked during pilot workshops held with CIAT members. Given that several retests were undertaken through ‘Membership Forums’ and ‘Future Groups’ when an opened ended questionnaire structure was used and allowed respondents to give some feedback on the questionnaire content, the final research instrument was designed as with closed questions. The questionnaire was designated in five main sections as follows:

Section A: Factors driving institutional change

- Eleven factors were identified to describe what would be perceived as core factors likely to generate the propensity for institutional change. These can be seen as areas that CIAT needs to embrace to bring about what the membership would consider as prophylactic measures to institutional change.

Section B: Value and desirability of institutional change within CIAT

- Twelve factors were identified to describe what would be seen as core value factors and also areas that generate the appropriateness of belonging to a professional organisation.

Section C: Existential factors likely to offer resistance to institutional change

- Thirteen attributes were required to be ranked according to their importance as perceived by respondents.

Section D: The priority areas of focus for Institutional change

- Nine priority areas were repeatedly identified during the exploratory workshops which the author used to collect data needed to inform the survey research instrument. They reflect the areas where the broad membership see as important to them and the

professional organisation they serve and subscribe to.

Section E: General information- respondents' characteristics

- Age of respondents for cross-tabulation purposes, and also to describe the sample characteristics.
- 'Years of working in Architectural Practice another predictor variable used to examine if attitudes are shaped by experience and how this influenced the responses given to various questions.
- Years of CIAT membership: another predictor variable adopted to see if years of service (loyalty) had a bearing on the response rating. When examining driving factors, priorities, value and desirability for institutional change, this predictor factor was critical to data extrapolation.
- Area of Architectural Speciality: another predictor seemingly useful to all the variables. The perceptions discerned from the different professional background would inform the model of incentives for the future.
- Evidence of Professional Practice: another predictor likely to give insight into the different designation in practice and how they rate or value certain activities or objectives of the CIAT.
- Predominant Specialism: this was used to profile who the core membership work for and what projects they undertake. Variations between private commercial, residential and public projects needed to be addressed.

With an online questionnaire, it is also important to have a layout which is suitable for respondents to rate with speedy completion Gooch and Vavreck (2019). With this in mind, a

question and answer approach were discounted. Instead, the respondents were asked to rate, rank and identify those factors, drivers, and priorities from a list that matched their own opinion and experience as well as their own intuition.

The factors, drivers, and areas of focus were all discerned from literature and the data generated via the focus group and individual interviews.

One possible drawback with a listing of factors is that respondents may simply be conditioned to rate on one side of the scale. However, feedback and responses from the pilot stages suggested this would not be the case.

3.5.5 Piloting the questionnaire

Prior to sending the final draft of the questionnaire to respondents, the survey was piloted during several workshops held with the membership of CIAT as part of the researcher's engagement with members in his capacity as the Vice President and President of CIAT. The original questionnaire and what shape it took, in the end, was as a result of the several feedbacks and input received from the piloting exercise.

The objective of the pilot was to ensure that the questions provided the required data and that any unnecessary difficulties, especially those relating to ambiguity, wording and questionnaire length, were eliminated. The pilot exercise led to a series of meetings with the final presentation of the main questions and format, which were very much the product of these discussions.

3.5.6 Response to the questionnaire

A total of two hundred and fifty-four (254) questionnaires were received at the close of the survey. Of these, eleven respondents, for one reason or another, had more than 10 per cent of

data missing. This phenomena was resolved after Bryman and Cramer (2005) with the eleven respondents considered not to have understood the survey, its meaning or benefits.

Regrettably, these eleven questionnaires were eliminated from the study, which brought the fully completed questionnaires to 243. This resulted in a response rate of 19.84 (i.e. 20) per cent and complied with Bryman and Cramer (2005); Elliott (2005); Howitt and Cramer (2011); and recently Gooch and Vavreck (2019) who have all asserted that a questionnaire response that falls between 15 to 25% is considered to be adequate and therefore acceptable. A total of 243 was therefore considered to provide enough quantitative data with which to form credible research opinions about the targeted population. Furthermore, the random selection of participants based on the Regional and professional designation ensured that every member in each Region had an equal chance of taking part in the study. Accordingly, by relying on a sampling methodology that conforms to traditional practice in social research, the author avoided introducing artificial confounds and biases in the study.

3.6 Statistical techniques and measures used in the study

The purpose of the data collection is analysis. The methods adopted for the data analysis invariably depend on the nature and complexity of research questions employed in meeting the objectives of the study. For this study, MS Excel was used for data transformation and analysis.

Throughout this study, data were rigorously and appropriately tested. The following are the test statistics employed in hypothesis testing, reduction of data or in preparation of typology: Chi-Square test, Phil and Cramer correlation and Kruskal-Wallis Test, Spearman's (r_s) rank correlation coefficient (Howitt and Cramer, 2011), Mann-Whitney (u) (Gooch and Vavreck (2019), Bivariate and Multivariate Factorial analysis (Elliott, 2005; Bryman and Cramer, 2005). The test statistic employed for testing hypotheses was set at a 5 per cent level of significance

(95% confidence level).

3.7 Random and measurement errors

Any research of this nature demands that the data collected is accurately handled and extrapolation of results is based on established methods. Researchers have warned that no matter how meticulous the process is, it is bound to yield some errors. In light of this, the researcher should aim to minimise such errors so that the data provides a more accurate reflection of the truth. Kumar (2019) has categorised error as comprising two components, namely:

- i. Random error and
- ii. Measurement error.

Random error is the unpredictable error synonymous in every research activity. It may be caused by lots of different factors; primarily, it is affected by sampling techniques. Gooch and Vavreck (2019) have advised that in order for a researcher to mitigate the consequences of random error, it is critical to start with a larger sample and ensure that the sample frame represents the true characteristics of the main population.

It was also found necessary to have a greater understanding of the endogenous factors driving change. This was achieved through direct interactions with members of the organisation during the interview phase. It was these experiences that helped to reshape the methodology of the study. The most challenging part of it was how to reach all Regions and centres and then to ensure that all designations were well represented in the proportions of those who took part in the study. For these reasons and going by Kumar (2019) and Gooch and Vavreck (2019), the decision was to employ a more extensive survey on the strength of using reliable statistical methods. With the objective being to explore key driving factors to institutional change and obtain a better understanding of the perceptions of the broad membership in terms of which

areas they consider CIAT should focus its attention on, the data collected needed to reflect how the institution could move forward and represent its members well. A larger sample allowed the researcher to minimise the probability of a particular result falling within 1 to 2 deviations from the mean population but crucially that 95% of the results must fall in this range. Gooch and Vavreck (2019) have insisted that a confidence level of 0.05 will be deemed acceptable in social science research. This implies that their chance of measurement error or standard error will be kept to less 5%. This is a chance occurrence that results are misreported but that in 95% of the cases, the results reported captures accurately and therefore is a true representation of the views of the membership.

The second type of error is associated with measurement error. Kumar (2018) is in total agreement with Oppenheim (1998) who spent considerable time narrating the effect of measurement error, on the validity and reliability of any research outcomes. They insist that it is at the analysis stages when the researcher becomes so isolated that there is no opportunity for them to consult a respondent and re-affirm the relativeness of the scoring given to a construct measurement. Measurement error evaluates how well or poorly a particular instrument performs in capturing the parameters of a targeted CIAT membership. Given that no research instrument is perfect, the researcher accepts that some error of this type may transpire. However, every effort was made to minimise the occurrence of such by ensuring uniformity of questions, content and the wording of questions. The piloting exercises helped greatly to resolve these concerns.

3.8 Internal validity tests

Alpha-Cronbach has been chosen as the appropriate method to detect internal consistency on the inter-item correlation of responses to the questionnaire instrument (Kangwa, 2004). The test validates the reliability of the questionnaire instrument and its content (Bryman and Cramer, 2005). It is essential to this test that the respondents were randomly selected using simple

random selection to ensure sufficient members across the six membership designations. The test measure interacting consistency among the items tested with 11 questionnaire items for FaDIc; 12 for Desirability factors, 8 for Exfacirc and 12 for Priareic and all these were rated by the 243 respondents who were finally admitted and accepted.

In order to be accepted, Howitt and Cramer (2011); and recently Gooch and Vavreck (2019) are categorical that a rating greater than 0.70 is considered to be good/acceptable; while a value of 0.80 to 0.9 and higher is considered to be excellent. As noted in Table 3.3, a Cronbach's Alpha value of 0.85 is within the excellent bracket and validates the pilot, and retesting carried out prior to the wider distribution of the research instrument.

| Table 3.3: Cronbach's Alpha Reliability Statistics | | | | | |
|---|--|----------------------------|--------------------------------|------------------------------------|---|
| | Case Processing Summary: Reliability of factors | | | | |
| | Drivers to Institutional Change (FaDIc) | Value-Desirability (VaDIc) | Existential factors (Exfacirc) | Prophylactic Strategies (priareic) | Scale as a whole (internal consistency reliability) |
| Cronbach's Alpha | 0.87 | 0.78 | 0.88 | 0.85 | 0.85 |
| Repetition stability | 0.89 | 0.83 | 0.90 | 0.88 | 0.88 |
| N of items | 11 | 12 | 8 | 12 | |

3.9 Summary and conclusion

This chapter attempted to describe in detail the methodological approach adopted in this study. The methodology adopted comprised face to face semi-structured interviews and focus groups at the exploratory phase of a mixed-methods research design aligned to the pragmatic paradigm, followed by survey research involving the broader membership of the CIAT. The survey yielded 254 returns, of which only 243 were fully completed. The sampling problems encountered and the strategies employed to minimise them, have been fully discussed. The following chapter presents the significant findings of the research.

4.0 Factors Driving Institutional Change - Data Analysis and Discussion

4.1 Introduction

Many of the problems and shortcomings that affect the change management process have attracted endless attention beginning with the Kurt Lewin Model (1946) to examining the most effective strategies (Lawrence (1999) and Kotter's (2012) 8 step model (Aiken and Keller, 2009) focus on the irrational side of change management and the volume of published material looking at change management all, one way or another, point to a strong hint that change is an inevitable process (Lawrence, 1999; Mento, Jones, & Dirndorfer 2002 and Kotter, 2008 and 2012). Unlike Burnes (2004b) and Cameron and Green (2009) few studies, have commented on the physical and technical difficulties and challenges peculiar to the '*not-for-profit*' organisations, the category to which professional institutions such as CIAT belong. For the latter, the change process is expected to be distinct to that of profit-oriented business entities. 'Whichever form an organisation takes, change is change, and it is an ever-going process' (Lawrence, 1999).

Unlike the many other organisations whose research outputs on change management appear to be the focus, professional body institutions are faced with different sets of objectives; they instead, are heavily reliant on the loyalty of the membership. The membership is not directly employed by CIAT, but the relationship can only be described as indirect or secondary and is often lost in ambiguity to a point where many of the would-be followers question their relevance.

In the UK professional education has been recognised as an essential part of post 16 education. Therefore the post-compulsory education provision is significantly recognised if it is registered in one way or another to specific professional training within a specified discipline. Indeed, in the UK, there are nearly ninety-two professional and regulatory bodies, all of which subscribe to

the Quality Assurance Agency for Higher Education (QAA) (QAA, 2019). Recently, the QAA produced guidelines directed to help universities and other higher education providers on how to provide apprenticeship as well as expand on the current provisions. Professional bodies are relevant to all the academic awarding qualifications. Their role is to ensure standards are upheld and that current and emerging technologies within the fields are reflected in the quality of the taught curriculum. This is often assured through the accreditation of the various provisions within universities and higher education bodies.

4.2 The role of professions to their professional body

The role of professional body institutions to society was vividly established in ICAEW (2012), which recognised that professional bodies were swimming against a tide of uncertainty. The congress of professional bodies reminded professional organisations of both exogenous and endogenous threats to their relevance. Unless they engaged proactively in very creative medium and long term strategies to foster development and strategies which encompassed and recognised challenges within their organisations (endogenous) and those external (exogenous) and to prepare the member base, products and reputations that would enhance relationships with other market actors and public authorities, they would be marching unprepared towards a period of uncertainty. ICAEW (2012), set up a roundtable occasion which enabled professional bodies from various countries to convene and share a country-by-country perspective of the challenges professional bodies faced in the 21st century (Harvey, Manson and Ward, 2014).

4.3: General information and characteristics of respondents to the study

Prior to examining the ranking order of the factors driving institutional change, it was felt necessary to understand the demographics of the sample frame for this study. Who was targeted, and what were their characteristics? This section of the questionnaire, therefore, presents respondents characteristics. It addresses aspects of the research instruments which prompted

respondents to address issues about their membership level, their age, gender, years of working in the field of architectural technology. They also provided information on how long the respondents have retained and sustained their chartered status, including the type of work they specialise in and, above all, the predominant of the kinds of projects that their respective firms offer to society. These questions addressed the characteristics of the respondents and, thus, the independent variables which would allow the study to decipher areas where respondents would vary or influence how they responded to various questions in the research instrument.

4.3.1 CIAT membership designation of the respondents

Table 4.1 shows a cross-tabulation of the demographic details relating to membership designation and how these can be delineated simultaneously based on gender and then further adjusted based on the Area of Architectural Specialism(AAS).

As shown in Table 4.1, the spread of the respondents mirrors that of the national membership profile for CIAT. Indeed a closer look at Table 4.2 indicates that 43% of respondents saw themselves as Chartered Technologists, and 28% are Associates. While it adds credibility to the effect that responses to the study are from a representative sample and. Therefore, likely to have captured the views of those who represent CIAT. CIAT (2011) admitted the relevance of monitoring the demographics changes as it is these that not only define the current but also inform the nature of the decisions needed to improve the profiling of all designations.

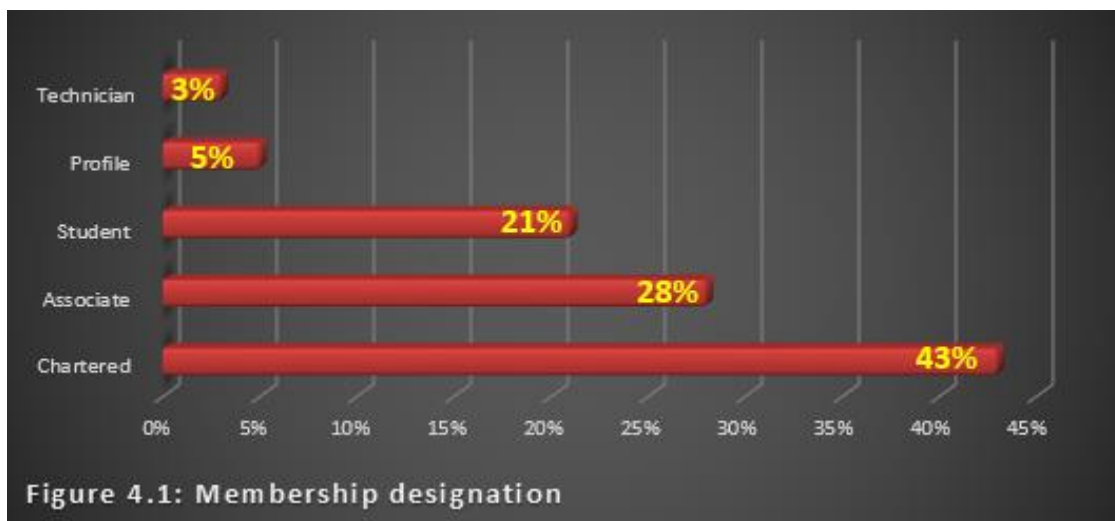
These are challenging times for CIAT and membership. We must stimulate debate on the impact of demographic changes on the CIAT membership over the next five, ten and fifteen years and as a consequence the resultant actions and priorities that are needed to sustain the CIAT as a chartered body..... As the demographics within the industry are skewed towards an ageing workforce at one end and a shrinking younger group at the other end then the professional membership bodies are likely to become more competitive for members. Our 20/20 vision must embrace this a core issue to confront (CIAT, 2011, p.4).

Further inspection of Table 4.1 suggests that consistent with the national pattern, the study captured 21% of students who were still pursuing their education, while Profile and Technicians came in as the least proportions of all the participants at 5.4% and 3%, respectively.

Table 4.1: Crosstabulation of membership designation by Gender and Area of Architectural Specialism

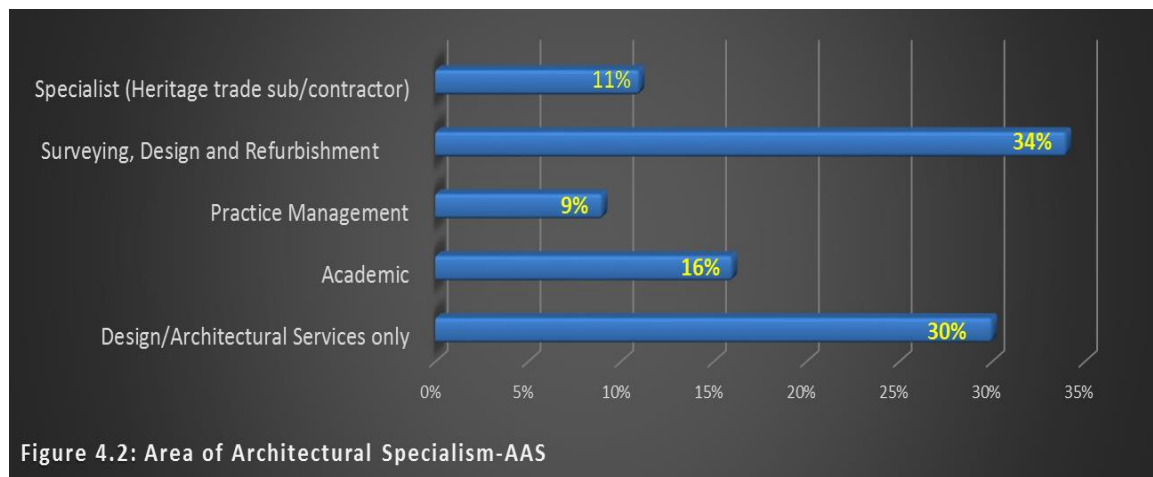
| Membership Designation | | | | | | | | | | | |
|--|-----------|--------|-----------|--------|---------|--------|---------|--------|------------|--------|-------|
| | Chartered | | Associate | | Student | | Profile | | Technician | | Total |
| Area of Architectural Specialism -AAS | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | |
| Design/Architectural Services only | 16 | 7 | 16 | 9 | 10 | 7 | 0 | 7 | 0 | 1 | 73 |
| Academic | 12 | 4 | 5 | 4 | 7 | 1 | 2 | 1 | 0 | 2 | 38 |
| Practice Management | 5 | 1 | 4 | 1 | 2 | 6 | 1 | 0 | 1 | 0 | 21 |
| Surveying, Design and Refurbishment | 35 | 8 | 19 | 3 | 10 | 4 | 1 | 1 | 2 | 0 | 83 |
| Specialist (Heritage trade sub/contractor) | 10 | 5 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 26 |
| Total | 78 | 25 | 49 | 19 | 32 | 18 | 4 | 9 | 3 | 4 | 241 |
| | 103 | | 68 | | 50 | | 13 | | 7 | | |
| Percentage | | | | | | | | | | | |
| Area of Architectural Specialism - AAS | Chartered | | Associate | | Student | | Profile | | Technician | | Total |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | |
| Design/Architectural Services only | 6.6 | 2.9 | 6.6 | 3.7 | 4.1 | 2.9 | 0.0 | 2.9 | 0.0 | 0.4 | 30 |
| Academic | 5.0 | 1.7 | 2.1 | 1.7 | 2.9 | 0.4 | 0.8 | 0.4 | 0.0 | 0.8 | 16 |
| Practice Management | 2.1 | 0.4 | 1.7 | 0.4 | 0.8 | 2.5 | 0.4 | 0.0 | 0.4 | 0.0 | 9 |
| Surveying, Design and Refurbishment | 14.5 | 3.3 | 7.9 | 1.2 | 4.1 | 1.7 | 0.4 | 0.4 | 0.8 | 0.0 | 34 |
| Specialist (Heritage trade sub/contractor) | 4.1 | 2.1 | 2.1 | 0.8 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 11 |
| Total | 32.4 | 10.4 | 20.3 | 7.9 | 13.3 | 7.5 | 1.7 | 3.7 | 1.2 | 1.7 | 100 |
| | 42.7 | | 28.2 | | 20.7 | | 5.4 | | 2.9 | | |

Figure 4.1 also endorses earlier assertions in Chapter One when the study reported that within CIAT, the membership was dominated by Chartered, Associate and students in that order respectively. Figure 4.1 validates the benefits in adopting the stratification method, including, the decision to randomise participants from the listing of membership teased at a regional level. As shown in Table 4.1 and Figure 4.1 stratification of the sample helped the study to get responses in proportions that mirror the actual membership designation across all CIAT's regional centres.



4.3.2 Areas of Architectural Specialism – AAS

A study of this nature would not be complete without understanding the range of projects and skill-specialisms in which respondents are involved. It was essential to the study to capture information from a broad range of respondents so that any inferences or interpretation made can be assured as coming from a sample that represents the membership of CIAT. Figure 4.2,



therefore shows that the range of architectural practice is broad with the majority of respondents specialised in design-related projects such as the conversion and restoration of existing buildings (34%). This group points to the recent growth in the Built Environment to ensure effective use and recycling of old buildings. The surge in low carbon design solutions and scarcity of greenbelts to facilitate new buildings means that the majority of the respondents are involved in projects which require working on existing structures and employing sustainable design practises in formulating the final design outlines. Furthermore, a further look at Figure 4.2 shows that 11% of respondents operate in the Heritage sector, another area of activity where most of the designs revolve around existing buildings. It is clear, therefore that 45% of respondents to this study provide their Architectural Technology skills to resolve the challenges of refurbishing and restoring existing properties, some of which are listed. It is also the case that 30% of respondents work for firms whose focus is along the traditional routes of providing architectural design services only. In terms of specialism, the last category includes 9% of the respondents who are predominantly employed by organisations which are strictly providing services for practice management firms.

4.3.3 Predominance of project-type

It is one thing setting up a specialist design outfit but another to successfully enjoy the steady business growth. With most firms in the construction subject to higher fluctuations in the business cycles, like many other business entities, CIAT's registered firms are also affected in the same measure, especially since the economic meltdown of 2008. It was therefore vital for the study to explore whether the projects that dominate the register of completed projects are in effect in the same areas the respondents work for and are also in the areas of their specialism.

Table 4.2 shows a cross-tabulation between the length of time of sustained Loyalty to CIAT membership and the type of projects which predominate membership activity. It is noted that almost 3 in 5 projects (62%) in which our respondents are actively involved are commercial projects. One way or another, the rise in the construction of shopping mars and the commercial office buildings demonstrate the areas where most of the architectural services are needed.

Table 4.2: Cross tabulation between Years of Practice and Predominance of Project-type

| Years of CIAT Professional Membership | | | | | | |
|---------------------------------------|-------------|-------------|-------------|-------------|------------|------------|
| Predominance of Project Type -PPT | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
| Housing | 5 | 5 | 3 | 1 | 0 | 14 |
| Education (Specialist and General) | 0 | 36 | 3 | 3 | 1 | 43 |
| Healthcare | 0 | 11 | 2 | 0 | 0 | 13 |
| Commercial | 52 | 62 | 15 | 11 | 9 | 149 |
| Both historical and non-historical | 7 | 8 | 3 | 1 | 3 | 22 |
| Total | 64 | 122 | 26 | 16 | 13 | 241 |
| Percentages | | | | | | |
| Predominance of Project Type -PPT | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
| Housing | 2.1 | 2.1 | 1.2 | 0.4 | 0.0 | 6 |
| Education (Specialist and General) | 0.0 | 14.9 | 1.2 | 1.2 | 0.4 | 18 |
| Healthcare | 0.0 | 4.6 | 0.8 | 0.0 | 0.0 | 5 |
| Commercial | 21.6 | 25.7 | 6.2 | 4.6 | 3.7 | 62 |
| Both historical and non-historical | 2.9 | 3.3 | 1.2 | 0.4 | 1.2 | 9 |
| Total | 26.6 | 50.6 | 10.8 | 6.6 | 5.4 | 100 |

The next cross-tabulation worthy further exploration was the desire to see the relationship between Area of specialism and predominance of projects-type. Table 4.3 and 4.4 show the volume of projects in which respondents reported to be the predominant areas of activity is the commercial

sector if discriminated against membership designation and type of projects for which their services are required.

Table 4.3: Cross tabulation between Area of Architectural Specialism and Predominance of Project-Type

| <i>Area of Architectural Specialism</i> | | | | | | |
|--|------------------------------------|-------------|---------------------|-------------------------------------|--|--------------|
| Predominance of Project Type -PPT | Design/Architectural Services only | Academic | Practice Management | Surveying, Design and Refurbishment | Specialist (Heritage trade sub/contractor) | Total |
| Housing | 2 | 2 | 4 | 2 | 4 | 14 |
| Education (Specialist and General) | 16 | 6 | 8 | 6 | 7 | 43 |
| Healthcare | 4 | 2 | 1 | 2 | 4 | 13 |
| Commercial | 42 | 24 | 6 | 68 | 9 | 149 |
| Both historical and non-historical | 9 | 4 | 2 | 5 | 2 | 22 |
| Total | 73 | 38 | 21 | 83 | 26 | 241 |
| <i>Percentages</i> | | | | | | |
| Predominance of Project Type -PPT | Design/Architectural Services only | Academic | Practice Management | Surveying, Design and Refurbishment | Specialist (Heritage trade sub/contractor) | Total |
| Housing | 0.8 | 0.8 | 1.7 | 0.8 | 1.7 | 6 |
| Education (Specialist and General) | 6.6 | 2.5 | 3.3 | 2.5 | 2.9 | 18 |
| Healthcare | 1.7 | 0.8 | 0.4 | 0.8 | 1.7 | 5 |
| Commercial | 17.4 | 10.0 | 2.5 | 28.2 | 3.7 | 62 |
| Both historical and non-historical | 3.7 | 1.7 | 0.8 | 2.1 | 0.8 | 9 |
| Total | 30.3 | 15.8 | 8.7 | 34.4 | 10.8 | 100 |

Table 4.4: Cross tabulation between Membership Designation and Predominance of Project-Type

| <i>Membership Designation</i> | | | | | | |
|--|-------------|-------------|-------------|------------|------------|--------------|
| Predominance of Project Type -PPT | Chartered | Associate | Student | Profile | Technician | Total |
| Housing | 8 | 3 | 1 | 0 | 2 | 14 |
| Education (Specialist and General) | 14 | 15 | 11 | 2 | 1 | 43 |
| Healthcare | 4 | 7 | 2 | 0 | 0 | 13 |
| Commercial | 66 | 37 | 33 | 10 | 3 | 149 |
| Both historical and non-historical | 11 | 6 | 3 | 1 | 1 | 22 |
| Total | 103 | 68 | 50 | 13 | 7 | 241 |
| <i>Percentages</i> | | | | | | |
| Predominance of Project Type -PPT | Chartered | Associate | Student | Profile | Technician | Total |
| Housing | 3.3 | 1.2 | 0.4 | 0.0 | 0.8 | 6 |
| Education (Specialist and General) | 5.8 | 6.2 | 4.6 | 0.8 | 0.4 | 18 |
| Healthcare | 1.7 | 2.9 | 0.8 | 0.0 | 0.0 | 5 |
| Commercial | 27.4 | 15.4 | 13.7 | 4.1 | 1.2 | 62 |
| Both historical and non-historical | 4.6 | 2.5 | 1.2 | 0.4 | 0.4 | 9 |
| Total | 42.7 | 28.2 | 20.7 | 5.4 | 2.9 | 100 |

Likewise, the combination of design skills and knowledge of the old construction detailing is the predominant skills the members are being called upon to provide the low carbon skills necessary to accomplish refurbishment and restoration activity (Table 4.3). Chartered Technologists are equally providing the key design skills in projects involving historic buildings. Indeed, Table 4.4

correspondingly, collaborate, this view that a fair amount of projects involving educational buildings suggest a surge in the volume of projects around schools, colleges and university campus-projects which accounted for 18% (Table 4.4) of the projects which predominate our respondents.

4.3.4 Age and gender profiles of respondents

The study is additionally, informed by respondents who, by age, reflect the current general profile for CIAT. Table 4.5 shows that 64% of the respondents are aged less than 40 years and somewhat quite ironic 25% of the sample is aged between 55 and above. This age profile presents a polarised dichotomy between the very young and very old membership with a very low representation of respondents in the middle age-range. This outcome validates the ongoing concerns within CIAT about the gradual decline in the membership; it is obvious from Table 4.5 that between the age decline is acute between the ages of 40 to 49 years. This concern was also echoed in CIAT's 2017 annual report when the executive was categorical in stating that:

Chartered Membership has been in decline as a percentage of total membership for the last 10 years and Chartered Members predicted to decline for next 15years. The demographic profile may accelerate decline with more than 50% of Chartered Members over 55 years old and almost 20% 65+ (CIAT, 2018a, p2).

Table 4.5: Cross tabulation between Age profile by Gender

| <i>Age of respondents</i> | | | | | | | | | |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|
| Gender | 25 to 29yrs | 30 to 34yrs | 35 to 39yrs | 40 to 44yrs | 45 to 49yrs | 50 to 54yrs | 55 to 59yrs | 60yrs+ | Total |
| Male | 22 | 45 | 20 | 9 | 8 | 11 | 47 | 4 | 166 |
| Female | 35 | 11 | 22 | 3 | 4 | 0 | 0 | 0 | 75 |
| Total | 57 | 56 | 42 | 12 | 12 | 11 | 47 | 4 | 241 |
| <i>Percentages</i> | | | | | | | | | |
| Gender | 25 to 29yrs | 30 to 34yrs | 35 to 39yrs | 40 to 44yrs | 45 to 49yrs | 50 to 54yrs | 55 to 59yrs | 60yrs+ | Total |
| Male | 9.1 | 18.7 | 8.3 | 3.7 | 3.3 | 4.6 | 19.5 | 1.7 | 69 |
| Female | 14.5 | 4.6 | 9.1 | 1.2 | 1.7 | 0.0 | 0.0 | 0.0 | 31 |
| Total | 23.7 | 23.2 | 17.4 | 5.0 | 5.0 | 4.6 | 19.5 | 1.7 | 100 |

Figure 4.3 shows that 69% of the sample were male compared to 31% of female participants. While

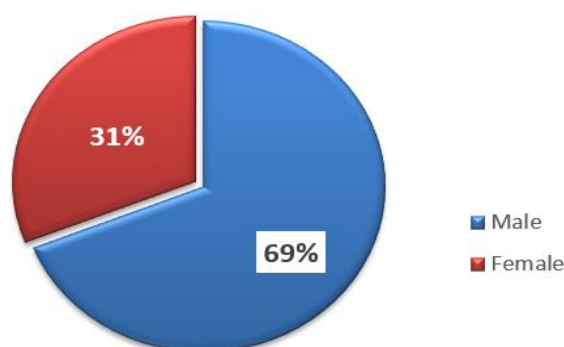


Figure 4.3: Distribution of sample by Gender

there is still evidence of a gender gap, nonetheless compared to other professional bodies, a representation of 31% is a decent ratio for the study.

4.3.5 Gender profile relative to membership designation

Indeed Table 4.6 shows that of the respondents targeted for the study, 64% are aged below 40 years. It was earlier observed in Table 4.5 that 20% of the study profile aged between 55 and 59 years age were all male respondents. This representation for this study also mirrors that of the national profile for CIAT. The study, therefore, further affirms the general apprehensiveness within the executive that more gender balancing strategies are required to attract the much needed female representation in CIAT.

Table 4.6: Cross tabulation between membership designation and Gender

| <i>Membership Designation</i> | | | | | | |
|-------------------------------|------------------|------------------|----------------|----------------|-------------------|--------------|
| Gender | <i>Chartered</i> | <i>Associate</i> | <i>Student</i> | <i>Profile</i> | <i>Technician</i> | <i>Total</i> |
| Male | 78 | 49 | 32 | 4 | 3 | 166 |
| Female | 25 | 19 | 18 | 9 | 4 | 75 |
| Total | 103 | 68 | 50 | 13 | 7 | 241 |
| <i>Percentages</i> | | | | | | |
| Gender | <i>Chartered</i> | <i>Associate</i> | <i>Student</i> | <i>Profile</i> | <i>Technician</i> | <i>Total</i> |
| Male | 32.4 | 20.3 | 13.3 | 1.7 | 1.2 | 69 |
| Female | 10.4 | 7.9 | 7.5 | 3.7 | 1.7 | 31 |
| Total | 42.7 | 28.2 | 20.7 | 5.4 | 2.9 | 100 |

However, an inspection of Figure 4.4, shows the only gender profile with more female representation is between the ages of 25 to 29 years and 35 to 39 years, respectively. The rest of the age gaps to 40 to 49 years and the over 50 years are 71% and 100% respectively and overwhelmingly in favour of male membership

This situation that will take years to correct especially when another examination of Table 4.7 shows that of the total sample of the female respondents aged between 25 to 29 years, the higher representation of this age profile is for female candidates (8.3%) who are drawn from students profile. This is then seconded by ‘associates’ (6.2%) and Chartered members (5%). It is the Universities that are working hard to attract female candidates as opposed to the CIAT Institute itself.

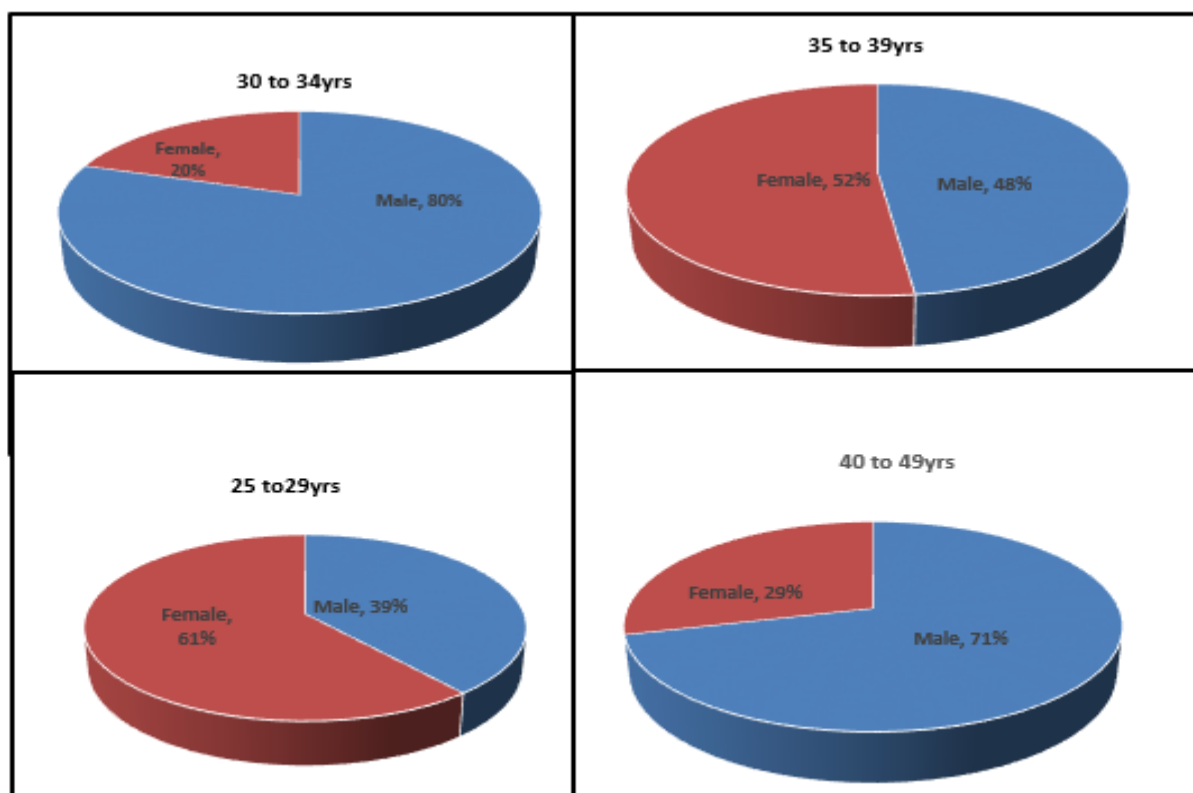


Figure 4.4: Distribution of Gender by age bands

Table 4.7: Cross tabulation between Membership Designation and age profile

| Membership Designation | | | | | | |
|------------------------|-------------|-------------|-------------|------------|------------|------------|
| Age of Respondents | Chartered | Associate | Student | Profile | Technician | Total |
| 25 to 29yrs | 12 | 15 | 20 | 5 | 5 | 57 |
| 30 to 34 yrs | 15 | 26 | 14 | 1 | 0 | 56 |
| 35 to 39yrs | 17 | 9 | 9 | 6 | 1 | 42 |
| 40 to 44yrs | 8 | 2 | 2 | 0 | 0 | 12 |
| 45 to 49yrs | 7 | 3 | 2 | 0 | 0 | 12 |
| 50 to 54yrs | 8 | 2 | 1 | 0 | 0 | 11 |
| 55 to 59yrs | 32 | 11 | 2 | 1 | 1 | 47 |
| 60yrs+ | 4 | 0 | 0 | 0 | 0 | 4 |
| Total | 103 | 68 | 50 | 13 | 7 | 241 |
| Percentages | | | | | | |
| Age of Respondents | Chartered | Associate | Student | Profile | Technician | Total |
| 25 to 29yrs | 5.0 | 6.2 | 8.3 | 2.1 | 2.1 | 24 |
| 30 to 34 yrs | 6.2 | 10.8 | 5.8 | 0.4 | 0.0 | 23 |
| 35 to 39yrs | 7.1 | 3.7 | 3.7 | 2.5 | 0.4 | 17 |
| 40 to 44yrs | 3.3 | 0.8 | 0.8 | 0.0 | 0.0 | 5 |
| 45 to 49yrs | 2.9 | 1.2 | 0.8 | 0.0 | 0.0 | 5 |
| 50 to 54yrs | 3.3 | 0.8 | 0.4 | 0.0 | 0.0 | 5 |
| 55 to 59yrs | 13.3 | 4.6 | 0.8 | 0.4 | 0.4 | 20 |
| 60yrs+ | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2 |
| Total | 42.7 | 28.2 | 20.7 | 5.4 | 2.9 | 100 |

An inspection of Table 4.8 reveals the real concerns of gender profiling within CIAT as to the number of years that most of the registered members are able to retain and sustain their membership. It can be discerned from Table 4.8 that there is a very sharp decline in the subscription of female

membership who stay loyal to the institution for more than ten years. Likewise, within this study, the number of the membership who is remaining as fully subscribed members takes a steep decline after 15 years. If there are any incentives the institution has to create, it is in these where careful planning will be required: how to attract female candidates to CIAT and more importantly ensuring they are able to stay for longer than ten years.

Table 4.8: Cross tabulation between CIAT membership and Gender
Years of CIAT membership

| Gender | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
|--------------------|-------------|-------------|-------------|-------------|------------|------------|
| Male | 28 | 88 | 23 | 15 | 12 | 166 |
| Female | 36 | 34 | 3 | 1 | 1 | 75 |
| Total | 64 | 122 | 26 | 16 | 13 | 241 |
| <i>Percentages</i> | | | | | | |
| Gender | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
| Male | 11.6 | 36.5 | 9.5 | 6.2 | 5.0 | 69 |
| Female | 14.9 | 14.1 | 1.2 | 0.4 | 0.4 | 31 |
| Total | 26.6 | 50.6 | 10.8 | 6.6 | 5.4 | 100 |

Indeed, Table 4.9 endorses the concerns raised when it can be noted that 88% of the respondents captured by the study stayed loyal and fully paid members of CIAT for a period of up to 14 years. The ideal situation should be for the majority of members to remain to sustain their membership for longer than 15 years.

However, as Table 4.9 shows, CIAT is struggling to attain this as only 12% continue their membership for longer than 15 years. This is quite a statement when given that the sample was randomly chosen per Region, implying that every member in each Region had the same chance of being selected to take part in the study. This stratified approach is not merely a chance occurrence but might be more revealing as the actual and vivid representation of what is pertaining within CIAT.

Table 4.9: Cross tabulation between Years of service to CIAT and membership designation

| <i>Years of membership service to CIAT</i> | | | |
|--|-------------------|---------------|--------------|
| Membership Designation | 0 to 14yrs | 15yrs+ | Total |
| Chartered | 85 | 18 | 103 |
| Associate | 60 | 8 | 68 |
| Student | 47 | 3 | 50 |
| Profile | 13 | 0 | 13 |
| Technician | 7 | 0 | 7 |
| Total | 212 | 29 | 241 |
| <i>Percentages</i> | | | |
| Membership Designation | 0 to 14yrs | 15yrs+ | Total |
| Chartered | 35.3 | 7.5 | 43 |
| Associate | 24.9 | 3.3 | 28 |
| Student | 19.5 | 1.2 | 21 |
| Profile | 5.4 | 0.0 | 5 |
| Technician | 2.9 | 0.0 | 3 |
| Total | 88.0 | 12.0 | 100 |

4.4 Factors Driving Institutional Change - FaDiC

The literature on the role of professional bodies (QAA, 2014; 2019) appears to suggest that a direct relationship between a professional body and its membership is one that is perceived to influence the flow of knowledge and how a body of knowledge in any field should be galvanized. Some institutions foster knowledge and encourage lifelong learning by giving opportunities for self-centred learning and reflection of industry practice and shifting needs (CECCAR, 2012). Brante (1990) offered a definition of a profession as being:

“Professions are non-manual full-time occupations which presuppose a long-established and tendentiously also scholarly...training which imparts specific, generalizable and theoretical professional knowledge, often proven by examination”.

The above definition appears to suggest there is a profession-client relationship in that a collection of professions, consulted for their in-depth knowledge in a subject area and their specialist knowledge, is valued as precursors and frontiers of knowledge. They are a collection of individuals who collectively, carry the responsibility for maintaining and promoting the growth of their

profession to the highest of standards and through an unshakable service and commitment to the community, society and share in this desire by upholding its virtues. Harvey and Manso (1995) insist that professions have to subscribe and possess certain characteristics which identify them as ‘birds of the same feather’. They (ibid) insist that professions must possess esoteric knowledge about their professional body, implying they must be beyond the knowledge of those outside of the professional institution. Indeed, by wearing the hat of an ambassador, CIAT members should possess a level of knowledge that surpasses those outside of the institute relative to the respective membership designations. Ambassadors of a professional body institute being to a closed community with a body of knowledge only for the privileged few members. CECCAR (2012) insists that professions have an altruistic, selfless, noble, and philanthropic level of conduct complemented by an acquired sense of purpose to their professional body; basically, it means they have to commit their activities in a way that ensures the long term survival of their profession. Fundamentally, therefore, the higher the designation the individual gains, the more it is deep-seated within them that they belong to a discipline where only a select-few can demonstrate such level of knowledge.

Given this indirect value-chain relationship, fewer of the literature addressed the challenges the ‘*not-for-profit*’ organisations face. The extent to which these organisations are inherently averse to ambidextrous structures, and then execute a well-informed change management process is yet to be explored and thus a subject of interest in this study.

In Chapter 3, the representation of the CIAT and its centres around the globe showed that this is a well-established institution whose membership hovers between eight thousand and nine-thousand subscriptions (CIAT, 2006; 20011a; 20011b; 2012; 2018). The trends on the decline have not changed, and as earlier stated, CIAT (2011) has been concerned about the sustained decline in the membership and its profile designation.

4.4.1 Piloting Factors Driving Institutional change

To understand the membership perception of the direction that CIAT must take and what initiatives it should prioritise, it was critical to ask the membership to have a say as to which factors they considered more relevant to their body. It is recognised that any professional body should maintain its tradition and the extent to which it fosters its role and relevance to its members and society at large. Seeking the opinions of its membership is the surest way of tagging the membership as it explores all dynamic paths of change. This study used the taskforces set up under CIAT to canvass the opinions of the membership as to which factors are critical to support institutional change.

Several factors were identified and put to the membership over a prolonged pilot period. This was the time when the author took executive positions in CIAT and used it as a personal journey to understand the needs of the membership. At the same time, CECCAR (2012) reported that the most recognised mandate a professional body needed to embrace is the desire to identify the specific scope of activities impactful on its standing as an institutional body and how it able to retain the competitiveness to keep its core members as well as its service to society and significantly, the wider economy.

This section of the study reports on the findings as set out in objective 1: to critically analyse how the membership compare in the ranking of factors driving institutional change-FaDiC.

To address this objective, it was felt from the initial stages of the research that to interrogate the data and what lies in it, cognisance also had to be paid to answering the overarching research question:

Among the broader membership, are there notable variations in the drivers, values and desirability factors derived from institutional change management?

The hypothesis was set out as follows:

Null Hypothesis

H_0 The perception of the factors driving institutional change - **FaDiC** - are the same among the designated membership in X and Y respondents; (i.e. there is no association)

Alternative Hypothesis

H_1 The perception of factors driving institutional change - **FaDiC** - are not the same among

the designated membership in X and Y respondents. (i.e. there is association)

As aforementioned, several task forces were used to pilot the relevance of factors perceived to drive change and more than twenty-five factors were identified. However, Bryman and Cramer (2005) insisted that the number of factor-items respondents should be asked to rate must be less than 12 and preferably less. In the end, the study opted to reduce the list of the factors to eleven; these represented the themes raised throughout the pilot stages. Factors with the most recurring episodes were tracked and reduced to eleven and were deduced to be the most critical Factors Driving Institutional Change – FaDiC. The eleven factors are, therefore defined as follows:

FaDiC1: Change the format for a professional assessment

This issue came up repeatedly as members felt that compared to other professional bodies, CIAT had not responded as much in dealing with the new-entrant assessment. Indeed in 2017, CIAT's launched the 'Professional Insight which focused on putting in place measures that focused on how the institution could grow:

Under 2019 professional Insight, CIAT has a developed aim of reaching the wider built environment community, with an objective of educating, engaging and enthusing the future generation of professionals. The events strengthen the collaboration between current and future members, built environment professionals, Regions and Centres, practices and employers and educational establishments (CIAT 2018a).

FaDiC2: Endpoint assessment for the new membership

Lately, endpoint assessment is an issue that has received considerable attention. Within CIAT the executive appears determined to maintain standards of excellence, consistency of targets which define the various designations and also the desire to ensure the current designations assists the recipients in reaching their potential through online resources and other industry-relevant CPD events. Ensuring that recently qualified membership are included as mentors and Member Panel Assessors to graduates is also essential.

Throughout 2017/18, the year saw year-long training sessions which together with monthly moderation of assessment procedures, protocols and the professional Review Interviews ensured that CIAT was complying with the requirements of the regulatory bodies. The ranking of this factor as

the second-highest driver demonstrates CIAT's must seriously examine the current routes of assessments to various designations. More so if CIAT is serious about establishing itself as an internationally reputed body, then how it retains its international reputation and appeal is critical. Setting a task force that ensures there is a high level of consistency in the attributes associated with various designations and also how these are widely understood and applied is seen as a crucial driver for improved membership intake.

FaDiC3 Ensure assessment route to corporate membership is alterable

The study has shown revelations from CIAT executive concerned about the continuous decline in the membership. Strategic measures identified above justify this as being a critical factor which CIAT needs to address. Ranked as the third top driver, the respondents are categorical that ensuring the assessment to achieve chartered status is clear and transparent and tailored to industry practice is very important. The 'Chartered' and 'Associate' designations which are heavily linked to promotion and annual remunerations should be attuned to meet the needs of the broader membership. The easier it is to understand the criteria for obtaining full membership, the more it is likely that may membership will want to acquire these designations as titles to their names. This quest to streamline the process is one that cannot be ignored by CIAT.

FaDiC4 Improve the perceived value of CIAT membership

The Current 2019 CIAT president responded to the mandate of CIAT to its membership by stating:

“You are all ambassadors for your discipline. The more you promote yourselves and your discipline and the protected descriptor Chartered Architectural Technologist, the faster our brand and profile continues to grow.” (CIAT, 2018a p.9)

Ranking this factor as the fourth critical driver is a bold statement from the respondents to the CIAT executive. Respondents are unanimous that the reputation of the institution to which they subscribe must begin with the members and how they conduct themselves in practice. This outcome shows how much the membership value their professional full paid subscription and perhaps a hint that they would like to see stricter monitoring of the use of these designations by the broader practice.

FaDiC5: Reviewing qualification at point of entry

The fifth highly ranked factor driving institutional change is like the above, also reflecting membership desire to see some softening of the entry points. This is mainly with the view of improving the transition from students to associated status. The recognition of the driver is a signal to CIAT executive that it must give a lot of credence to improving the number of universities offering accredited Architectural Technology Courses. Earlier in the chapter, the study revealed that students' membership remains the main source of entry to CIAT.

FaDiC6: Accommodate entry fees/entry points for the new memberships

One of the current mission of CIAT is to retain membership even with the threat of Brexit. Given the wider gap in membership between the ages of 40 to 55, this factor demonstrates the ongoing concerns that this is an area that deserves further consideration.

FaDiC7: Widen gates of membership to other professionals bodies

Other professional bodies have looked at ways of diversifying the routes to membership. While CIAT recognises it is the lead professional body for Architectural Technology, it is also critical for the body to represent outside professionals working in the field of architectural Technology to find it easier to get to chartered status. Table 4.5 showed that 71% of the respondents were Chartered and Associate members. While the sample is informed by the very loyal membership, it is also the case that 64% of the sample were aged between 25 and 39 years an indication that the study attracted the most economically active respondents. Therefore for these respondents affordability may not necessarily be an issue and hence the perception that this is not the most critical factor to them, and thus the third last factor perceived to be a necessary driver for change. This observation does not change the fact that the executive of CIAT has been worried about the decline in membership, especially among the senior citizens.

We will be accessible and open to all that meet our criteria without regard to social and cultural barriers and boundaries (CIAT, 2012 p. 4)

This factor represents the desire to widen participation, so the membership is a constituent of professionals from far afar fields of Built Environment professionals. The extent to which this can be done

FaDiC₈: Open up more routes to professional designation of CIAT

As noted above the extent to which CIAT could adapt some members of CIOB, or RICS who specifically work in the design discipline and who keen to belong to both organisations is another hurdle that the membership recognised as critical to institutional change.

In June 2018, Executive Board approved the brief for the holistic review of the Institute's membership grades, structure and qualifying mechanisms (academic and practice-based). The Review will consider all grades holistically (CIAT, 2018a).

FaDiC₉: Improving membership access to technical design specifications toolkits

This factor represents the perceived value of membership. CIAT has over the years consistently reviewed the extent to which it remains relevant to Architectural Technology professionals. This is key if the institute is to sustain its future growth and expansion of the profession and membership within the UK and internationally. The inclusion of the factor demonstrates the appeal by the membership to seek more value and return from their membership.

FaDiC₁₀: Lack of recognised pillars for CIAT membership

This is a low ranked driver. However, making the top ten is also an indication that CIAT's effort to align the designations with industry practice is another area which has continued to gather momentum within CIAT. A look at the competitors, CIOB and RICS is a case in point. These bodies have drawn up collaborative agreements where membership can obtain reduced chartered membership if they are already recognised with one institution already. For instance, the emerging fields of low carbon designs, and Chartered Environmentalist point to the fact that CIAT has to look beyond the traditional designations of Technologist, Associates and Technicians respectively. The remit of CIAT should broaden to the international market and attract the various shades of

technologist around the world. Therefore, the inclusion of this factor implies that the membership recognises the institution needs to evolve and become organic and have a wider appeal.

FaDiC₁₁: Diversify the design, management and practice toolkits to a broader pool












The quest for CIAT to diversify is yet again, another factor which demonstrates the desire among the membership to seek more value for seeking chartered status. Although the members consider it the least impactful driver; however, for it to make the top eleven, shows this to be an area, CIAT must not undermine. It is undoubtedly the case that CIAT performs well in this area with reduced licensing from the likes of Autodesk and Microsoft and Apple. However, its inclusion in the top eleven also demonstrates the affirmative position even within CIAT that more outreach initiatives are necessary to loop back into the various membership designations, especially among the small and medium design firms. CIAT has to consider incentives that protect the core membership against the competition.

The Institute is developing guidance to help practices upskill their employees and has significant importance for the future of the sector, nationally and internationally (CIAT, 2012 p.7).

4.5 Aggregate ranking of the FaDiC

In Table 4.10, the eleven drivers were identified during the piloting stages of the study. Respondents were asked to indicate what drivers were more critical and aligned to the CIAT. Respondents were asked for their opinion as to the relevance of drivers measured on ordinal

Table 4.10: Aggregate rank order of factors driving Institutional change -FaDiC

| | | Sample N = 214 | | |
|---------|---|----------------|--|--|
| | Description of factors driving institutional change - FaDiC | mean score | Rank | Implied meaning |
| FaDiC4 | Improve the perceived value of CIAT membership | 1.038 |  1 | Endogeneity: CIAT reputation & Relevance |
| FaDiC3 | Ensure assessment route to corporate membership is alterable | 2.019 |  2 | |
| FaDiC1 | Change the format for professional assessment | 3.345 |  3 | |
| FaDiC7 | Widen gates of membership to other professionals bodies | 4.256 |  4 | Exogeneity: Increase loyalty & sustain membership subscription |
| FaDiC6 | Accommodate entry fees/entry points for the new memberships | 4.396 |  5 | |
| FaDiC8 | Open up more routes to professional designation of CIAT | 4.566 |  6 | |
| FaDiC2 | Endpoint assessment for the new membership | 4.589 |  7 | |
| FaDiC5 | Reviewing qualification at point of entry | 4.712 |  8 | |
| FaDiC11 | Diversify the design, management and practice toolkits to a wider pool | 5.142 |  9 | Ambidextrous: Access to AT Services |
| FaDiC10 | Lack of recognised pillars for CIAT membership | 5.283 |  10 | |
| FaDiC9 | Improving membership access to technical design specifications/toolkits | 6.189 |  11 | |

satisfaction scale, where: 1 = extremely important, 2 = very important, 3 = important, 4 = uncertain, 5 = unimportant and 6 = not at all important.

A cursory look at Table 4.10 reveals three areas of concerns: the sum of the top three factors driving change are received to be influenced within CIAT, thus grouped or defined together under a collective implied meaning. Likewise, the follow-up five factors pointed to factors outside CIAT as an organisation and grouped together under one heading. The last three factors in the table also draw a parallel set of meaning and are therefore defined together. The significance of the respective implied meanings receives further consideration in the next sections.

4.5.1 Endogeneity drivers: CIAT's reputation and relevance

Endogenous drivers are factors whose value and influence is a derivative of decisions taken within the institution of CIAT. The same factors can be said to be internal and thus inherent to the organisation. They are factors that bring value whose effect are sometimes imposed by defined changes outside of the organisation. They may be driven internally, resulting in *endogenous change*. However, the changes, though internally driven, are often a response to what is happening outside of the organisation.

The exceeding driver derived from the rank order shown earlier in Table 4.10 stated: 'Improving the perceived value of CIAT memberships', 'Ensuring assessment route to corporate membership was alterable' and changing the format of professional assessment'. These three drivers are all internal, and in order to have their optimum effect, they will require internal decisions or initiatives that originate within CIAT. Indeed Wooldridge (2009) ensuring assessment route was ranked as the most important factor; an indication that members are beginning to probe whether their own membership packages do offer sufficient incentives to warrant further the need to retain their loyalty and sustain the same loyalty year in and year out.

The next strategic initiative is to streamline the route to chartered membership. The membership feels there should more flexibility on the conditions that members are required to meet.

4.5.2 Exogeneity drivers: Increase loyalty and sustain membership numbers

Exogenous drivers are factors whose value and influence is from outside of the CIAT as an institution. These are, therefore, perceived to external to the inherent nature of the organisation and are likely to impose or result in *exogenous change*.

The above points are critical outcomes in that earlier in the section, and it was revealed that there are very few members that sustain their membership for longer than 15 years. If anything, Table 4.8 showed that 88% of the membership held their membership for up to 14 years. This means that on average, only 12% retain their membership for longer than 15 years and of these, the majority are male aged between 55 and 59 years. The Institution is not attracting enough of the most economically active membership (between the ages of 30 to 45 years both as current and future members. This pool of membership needs to be given incentives to ensure they find value in the institution and also prowess in seeking value and desire to achieve the chartered status designation and more importantly to keep this for a longer period leading into retirement years.

4.5.3 Access to CIAT design related services

Further inspection of Table 4.9 shows that the membership feels that the institution should diversify in the design tools that come with chartered status. Perhaps more effort should be directed into making partnership agreement with software design outfits such as Auto-Desk so that more incentives are provided to CIAT membership. Access to Design Specification tools if incorporated as part of the BIM software, would help.

4.6 Degree of variance and unanimity in the ranking of Factors Driving Change

The study earlier posited in Table 4.8 that 88% of respondents have up to 14 years of sustained CIAT membership while practising as Architectural Technologists. The level of Architectural experience or chartered industry status should essentially impact on the observation that respondents have on any issues raised within this study. Correspondingly as the old adage goes '*experience is the best teacher*' would point to the fact that individual became better designers the more projects they

have to accomplish. It appears logical to follow up on this by attempting to establish whether a logical relationship exists in the ranking of drivers perceived to drive institutional change between respondents with up to 14 years of CIAT membership (88%) and those with 15 years and more (12%).

4.6.1 Bivariate analysis - Spearman Rank Correlation–

The extent to which two groups agree or disagree in their perception can be deduced through a method of establishing correlation or degree of association. In this section of the study, the relative length of Loyalty to CIAT is treated as an independent variable likely to affect the degree of ranking provided by the respondents.

The study employs a statistical method of Spearman Ranks (Rho) correlation coefficient which measures the extent of association or closeness in the ranks provided by two sets of respondents: respondents with up to 14 years of CIAT membership and those with more than 15 years of CIAT membership.

4.6.2 Test of hypothesis – Years CIAT membership Vs ranking of FaDiC

In order to determine there are differences in the perception of the factors driving institutional change this would only be possible if the study was able to establish how close or distinct the ranks are based on architectural experience.

The original research question (as identified in chapter 1) was:

- Are the perceived factors driving institutional change the same among the designated membership?

The test of the hypothesis was established for two groups of respondents as a two-tailed test following two distinct, independent variables, namely:

X = Respondents with up to 14 years of CIAT membership (Independent variable (IV_1))

Y = Respondents with 15 years and over of CIAT membership (IV_2)

The Null Hypothesis:

H_0 The perception of the factors driving institutional change - FaDiC - are the same among the designated membership in X and Y respondents; (i.e. there is no association)

The Alternative Hypothesis:

H_1 The perception of factors driving institutional change - **FaDiC** - are not the same among the designated membership in X and Y respondents. (i.e. there an association)

As shown earlier in Table 4.11 the study first has to establish the relative means for each independent variables (X) and (Y) following which factors are ordered based on the rank order noted earlier in Table 4.10 at an aggregate level (N = 241).

The procedure unfolds by establishing a rank location of the mean values within each group; this is what initially is used to compare the extent to which the two groups either agree or differ in their perception of the relevance of each of the eleven factors as key drivers to change.

Table 4.11: Comparative ranking of FaDiC relative to sustained period of CIAT membership

| | X <i>n</i> = 212 | | Y <i>n</i> = 29 | | Difference of ranks | |
|------------------|----------------------------|-----------------|---------------------------|-----------------|------------------------|-----------------------|
| <i>Sample(R)</i> | up to 14yrs | <i>Rank (X)</i> | 15yrs + | <i>Rank (Y)</i> | <i>(d)</i> | <i>d</i> ² |
| FaDiC4 | 1.79 | 1 | 2.25 | 1 | 0 | 0 |
| FaDiC3 | 2.64 | 2 | 3.36 | 2 | 0 | 0 |
| FaDiC1 | 3.12 | 3 | 3.61 | 3 | 0 | 0 |
| FaDiC7 | 4.40 | 5 | 3.86 | 4 | 1 | 1 |
| FaDiC6 | 4.00 | 4 | 4.75 | 6 | -2 | 4 |
| FaDiC8 | 4.92 | 6 | 4.25 | 5 | 1 | 1 |
| FaDiC2 | 5.44 | 7 | 5.14 | 7 | 0 | 0 |
| FaDiC5 | 5.68 | 8 | 6.64 | 8 | 0 | 0 |
| FaDic11 | 6.05 | 9 | 6.48 | 9 | 0 | 0 |
| FaDic10 | 6.25 | 10 | 6.55 | 10 | 0 | 0 |
| FaDic9 | 6.66 | 11 | 6.79 | 11 | 0 | 0 |

$$\sum d^2 = 6$$

The statistic that establishes the rank correlation coefficient measures the closeness in ratings provided by the respondents where a value of $r_s = 1$ is considered to denote a perfect harmony, and unanimity in the perceived factors whereas total disagreement would often lead to a value of $r_s = -1$. Which is negative agreement.

The spearman's rank correlation is given by the formula:

$$r_s = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Where given the above n is the number of **FaDiC** factors and sum of difference, obtained from Table 4.11, results in a value of 6. Using this value (derived from Table 4.11 the calculation for the coefficient value of rank correlation is derived from the formula as noted above:

$$r_s = 1 - \frac{6(6)}{11(11^2 - 1)}$$

$$r_s = 1 - \frac{36}{1320}$$

$$r_s = 0.972$$

The test statistic follows a critical table value of the Spearman's rank correlation which should be set as a coefficient value at significant (α) level of 0.05 (95%) confidence level and where $n = 11$.

The procedure, therefore, is to reject the H_0 at 0.05 significant level if the computed value of $r_s > 0.523$ taken from Appendix A, which contains the critical table value for Spearman's ranks correlation coefficient obtained in row $n = 11$, and relating to the column value under $\alpha = 0.05$.

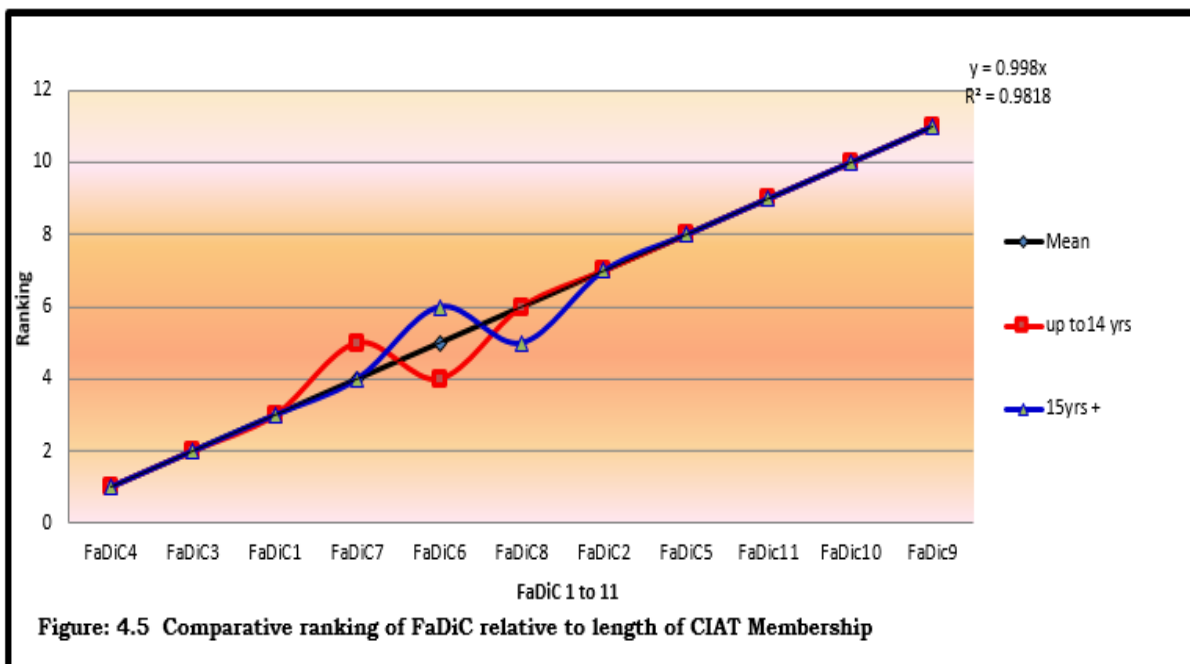
Since the computed value of 0.972 far exceeds the table value of 0.523, the study rejects the H_0 (the null hypothesis) in favour of the alternative (H_1) which stated:

H_1 There is association in the ranks of **FaDiC** between X and Y respondents. The study, therefore, concludes that there validity for the sample to be paired. Indeed the $r_s > 0.818$ if compared at a p-value is < 0.005 is deduced to be extremely high, showing a very strong positive correlation in the way respondents ranked the drivers to change.

Table 4.12 provides the relative rank position of the which was used to plot the scatterplot shown in Figure 4.5; it confirms the outcome of the closeness in the ranking of driving factors for change showing that there is unanimity in the ranking of the drivers.

Table 4.12: Mean ranks within FaDiC by length of CIAT membership

| | Mean | up to14 yrs | 15yrs + |
|---------|------|-------------|---------|
| FaDiC4 | 1 | 1 | 1 |
| FaDiC3 | 2 | 2 | 2 |
| FaDiC1 | 3 | 3 | 3 |
| FaDiC7 | 4 | 5 | 4 |
| FaDiC6 | 5 | 4 | 6 |
| FaDiC8 | 6 | 6 | 5 |
| FaDiC2 | 7 | 7 | 7 |
| FaDiC5 | 8 | 8 | 8 |
| FaDiC11 | 9 | 9 | 9 |
| FaDiC10 | 10 | 10 | 10 |
| FaDiC9 | 11 | 11 | 11 |



Indeed a further look at Table 4.11 reiterates the shaded area as the only areas with a slight hint of rater-variance. Based on this outcome, the study proceeds to conclude that regardless of the years of service to CIAT membership, when it comes to identifying the drivers to change, the respondents are resoundingly unanimous as which of the factors are more relevant and critical.

4.7 Summary and Conclusion

In summary, this chapter has analysed the factors driving institutional change which as part of the pilot study presented to Taskforce members helped to reduce the factors which were identified from the literature. The number of factors was reduced from twenty-five to eleven.

All the eleven factors were important to the study and especially so that they had to be whittled down to a given set of factors which respondents could easily handle when isolating one factor against another. The eleven factors were presented to the 214 respondents, and these were reduced eleven and subject to ranking in order of preference. At the aggregate level, three main enveloping factors emerged:

Endogeneity drivers towards CIAT's reputation and Relevance

The overarching theme generated by collapsing three FaDic factors related to the call for CIAT to instil initiatives that can promote the reputation of the Institution and also internally-driven incentives that can allow it to instil its relevance to the broader membership. The findings indicate that members need to feel embraced as ambassadors of the institution and as such, deserve to have access to all the brands associated with the professional body.

Exogeneity drivers towards increasing Loyalty and sustaining membership subscription

This overarching theme came from the collapse of five FiDiC factors. They reflect the need for initiatives and incentives of widening membership beyond the traditional routes by looking at capturing new emerging fields and also individuals who want to belong more than one professional body.

Ambidextrous: access to AT Services

Further analysis showed that the lowest-scoring factors were those that define the extent to which CIAT as an institution needed to diversify in the design packages available to assist small to medium

design firms who are continually looking to affordable access to design licensing tools. The typical example of Education Licence may need to be extended to firms that are struggling to get by. This is the one way to promote a competitive advantage even among companies that are just struggling to even exist in the market. Perhaps more effort should be directed into making partnership agreement with software design outfits such as Auto-Desk and Revit packages so that more of these software packages are provided to CIAT practice firms and the sole designers with approved chartered membership.

The general outline and rank order of the factors indicates that regardless of the number of years that members have subscribed to CIAT when it comes to ranking which of the eleven factors, the bivariate analysis of spearman ranks correlation revealed that there is high unanimity among the 214 respondents as which FaDiC are more relevant

Having identified the factors driving institutional change, the next chapter will evaluate the extent of agreement among the broad membership of CIAT as to the value and desirability derived from institutional change.

5.0 Value and Desirability Derived from Institutional Change – VaDIc

5.1 Introduction

This chapter examines the extent of the agreement by the broad membership of CIAT as to the value and desirability derived from institutional change, hereafter abbreviated as VaDIc. It is a build-up on the themes raised in chapter four which revealed, on the one hand: that the membership leans more towards endogeneity drivers envisaged to be critical to improving CIAT's reputation and its professional relevance to the broader membership. On the other hand, the study defined the impetus-factors responsible for making CIAT, as an organisation, more appealing to members of other professional institutions as exogeneity drivers.

Given the foregoing, it is the case that CIAT relies on its broad membership to discharge its regulatory activities. Effectively, as a public, professional body, it owes much of its success to the membership delivering the services and mandate over which it has jurisdiction. In the eyes of CIAT, as a professional body, the reference to 'society' is not just exclusive to the geographical bounds of the UK, but well beyond its shores. Therefore, for CIAT to stretch and deliver on all its commitments, and to continue to be useful, remain current and relevant to its broad membership, it must invest in the development of new services. This it can do, by building on its traditional strengths while maintaining its relevance with an eye firmly cast on industry-market demands, as well as evolve with the transient needs of its new and old membership. Thus, CIAT exists to give value to its membership and therefore, the organisation acts and operates in the public interest. Given the aforementioned, this chapter intends to define the '*value-desirability*' factors derived from institutional change.

5.2 The distinctness of the concept of value

The concept of 'value', has been defined by Harris (2017), evokes the emotional attachment of a multi-perspective notion of importance, significance and usefulness. Knappett (2004), on the one hand, refers to value as a concept as one whose interconnectedness is of people, objects and things. On the other hand, Alvesson (2016) depicts the notion of value as one that relates to mutable

consequential categories of importance, which may include places, objects or organisations. Harris (2017) further states that one of the central aspects to the concept of 'value' is, fundamentally, the recurring question of '*desirability*'. Whatever one desires, the driver is also in what an individual attaches as perceived value. Therefore, the concept of desirability evokes the question: what do CIAT membership want as institutional services?

Woodward (2005) argues that when defining 'value', cognisance must be given to the issue of interrogating the ensuing gains. Those anticipated gains are the drivers, which are invariably so changeable and capricious that the resulting perspective of value is accordingly, subjective. This position endorses Harris (2017)'s position when she draws on the concept of 'value' as a derivative of a multi-perspective notion. Alvesson (2016) has explicated this further, citing the fact that the conception of thoughts materialises compellingly if driven by notions of perceived value. Perceived value, on the one hand, is, according to Woodward (2005), a uniquely preferred personal position and individual takes; it is, therefore, an individualised position influenced by a very narrow cognitive view of an ones' perception of the ensuing 'reward(s)'.

Given the above-mentioned, it is necessarily prudent to appreciate that perceived value may not always be the same as the actual or true value of what is aspired or wished. This is the very reason that Woodward (2005) and Harris (2017) both insist that value is simply a notion that is biased and, not surprising, capricious. An example that can illuminate this further is the longing for possibilities associated with the things that we may desire the most yet may not even own. For instance, capital borrowed from a bank is a perfect example of how an average person is willing to spend borrowed money, which is not theirs and yet they are readily prepared to face the consequences of using borrowed resources and payback at exorbitant interest rates. The analogy in context subsumes a person who goes out to borrow capital, perhaps influenced by the outcomes of what they do not own, and to which they will attach value. The desire to find a means to own the attached value is simply the impetus to the perceived value and thus desirability to seek access to 'borrowed-capital'

whatever the interest rates. At an individual level, therefore, capital becomes a bridging factor and thus, a solution to purchasing an item of value!

Indeed banks work on the basis that value is incremental to the capital borrowed. The more valuable and desirable the object is to the many, the more capital value it will attract. A house has so much attached value and the desire to own one is the driver that prepares one to commit to paying interest on the borrowed capital for a period of nearly twenty-five years. Twenty-five years is too long a period to service one's account, and thus a mortgage purchase comes with a compounded risk of the likelihood of being able to default on the payments. Therefore, the more the perceived risk there is in meeting one's desire, the higher the interest rates imposed by the lenders. Thus, a society where most people buy houses, cars with money they do not own despite that fact that they are willing to borrow on higher interest rates is a classic example of how '*desire*' can influence the mutative nature of *perceived value* (Harris, 2017). In fiscal terms, we pay back borrowed money at interest to the bank, and the willingness has a stimulant: the value attached to the desired object or product (Mukhany, 2016).

5.2.1 The concept of desirability due to attached-value

Woodward (2005) acknowledges Knappett (2004), who opined that the inclination to seek value is influenced by what society accepts as the norm or the preconceived attachment to perceived value. If this were to be the case, then one assumes, as argued by Harris (2017), that the inclination to desire something of value is partly, driven by the amount of effort, time, and expense needed to attain and fulfil one's desire. Elsewhere, Knappett (2004) is categorical in stating that when measuring the extent of '*desire*', one must also conceptualise the appropriateness in what is desirable. The more onerous is the effort, or time towards the fulfilment of one's desire, the more reluctant the individual is willing to attach substantial thought to the notion of value. Knappett (2004) tries to exonerate this position with an example citing that most people would wish they

owned or lived in a stately manor house; but if the cost of owning one is extremely beyond one's reach, then inherently, one will not attach so much value to it, albeit the desire may still be there.

In the light of the above, it is palpable to deduce that the nexus between value and desirability is relative to the allure an individual allows to dictate a given set of choices or options (Harris, 2017). Woodward (2005) has for instance, given some weight to the concept of conformity to societal rules and expectations as another key determinant of what an individual will value over and above their expectations or desires! We may value paying allegiance to a tribe, just because it allows us to maintain the tribal settings of belonging to a tribe even though if given a choice, one might opt out of some of the seemingly compelling traditions associated with a tribe. It follows, therefore, that CIAT must create strategies aimed at developing broad expertise in the field of Architectural Technology. CIAT, in this case, will be the tribe to which some members will give credence and are happy to be a part of, and well above any other institution; for these members, no other institution can offer the same degree of professional conformity than CIAT has to offer. The desire grows out of all the perceived value-benefits set aside for the members. With the ongoing concerns about dwindling numbers, any strategies created must foster the propensity for increased membership. Therefore, the desirability and appropriateness of belonging to the exclusive club of the CIAT is the multiplier effect exponential to all the perceived added value of professional membership.

Despite the above observations, a caucus round table of all professional bodies in Europe, arranged by CECCAR (2012), noted that it was instructive for professional bodies to work to secure their relevance. CECCAR (2012) advised professional institutions to invest in strategies that incentivised the old membership to remain as fully paid loyal members. This meeting of professionals allowed the executives in attendance to identify common challenges and invest in various strategies which fostered closer working with universities. One of these is in investing in syllabuses, new technologies, and opportunities for institutions to accommodate varying employment conditions for its broad membership and example, allowing professional mothers to freeze their membership until they returned to work. Incentives to allow the interlacing of membership around increased flexibility

in the re-attainment of chartered membership formed part of the CECCAR (2012) debate. Critical in the deliberations was also the demand placed on all institutions to avoid capricious or whimsical mission statements that bore little relevance to the evolving demands of the industry as most new entrants in Architectural Technology worked for free for varying periods before employers took them on a permanent basis. These members needed recognition in CIAT's current designations; their allegiance to a professional body may be the thing that makes a difference between tester initiatives and which may lead to permanent employment after that.

Abound within this, is the belief (After Woodward, 2005 and Harris, 2017) that a perspective of value by the membership should not be perceived to be intangible or erratic but one which reflects the professional dexterities of the world of work. This is widely acknowledged by Woodward (2005) and Harris (2017) which they define as the desirability derived from attached value; whenever it occurs, the increase in desirability increases exponential to the perceived value by the consumers. In the case of CIAT, the value rests in observing the continuous redefinition of software such as:

- The 2019 3D architecture;
- BIM software,
- AutoCAD Architecture,
- SketchUp,
- Autodesk Revit,
- FreeCAD,
- ArchiCAD,
- Vectorm,
- Rhenocero3D.

The recognition of the Architectural Technologists skills, as demanded by the industry. Among SMEs, the value lies in the extent to which the workers' membership of CIAT incentivises small firms' access to reduced licensing packages. In this example, it is clear what the perceived value is: reduced fees being the driver, which focuses the desirability on sustaining membership for longer than 15 years. In the case of CIAT, this might imply further developing collaboration with the

private sector training providers who can then support the professional body in its effort of trying to narrow the knowledge gap in the critical areas of design technology.

The main overarching question for this research was set out as follows:

Among the broader membership, are there notable variations in the drivers, values and desirability factors derived from institutional change management?

The previous chapter dealt with drivers, and from those, as mentioned earlier, this chapter addresses the ‘value-desirability’ factors and their relevance to institutional change management.

5.3 The perceived value and desirability for Institutional change

Amid the aforesaid demands placed on professional bodies, the extent to which the current members find value in their membership and retain the desirability to be fully paid up members of CIAT depends on a critical body of knowledge which deserves to be explored. What do the members expect to see as the *value* and the *desirability* derived from *institutional change* (**VaDIc**)?

Similar to methodology used in chapter four, which examined the factors driving institutional change, it is apt and logical for this section of the study to investigate which areas of CIAT’s activities, perceived to reward the respondents more value for their membership and thus determine the extent of desirability derived from institutional change. As the membership is the engine of the professional body, they define its viability; similarly, it is essential to generate an inventory of factors which, collectively, determine CIAT’s relevance.

5.3.1. Piloting the perceived value and desirability for Institutional change -VaDIc

The study needed to explore the different shades of factors likely to give meaning and therefore generate the desirability or appropriateness of the membership to CIAT. The only way to uncover this was to explore severally pilot sessions when respondents would be presented with a list of factors discerned from interviewing as well as from the fifteen years of working as Vice President Education and CIAT President respectively. At several of these various workshops, including task force groups, the researcher asked the membership in attendance to identify, from a given list. These

factors contributed to the value, desirability and thus appropriateness of retaining CIAT membership.

An initial list of thirty 'value-desirability' factors was generated, and respondents were asked to reduce these to fifteen. The factors retained were said to project to the professional body, areas that the membership perceived to be giving rise to prophylactic strategies likely to create and engender the impetus for institutional change. The fifteen were gradually, whittled to 12, the maximum number of factors respondents could be asked to rank with confidence.

A number of these factors are teased and compared based on the application of non-parametric statistical techniques, such as Spearman's rank correlation coefficient, Multivariate analysis of variance using a none parametric equivalent method of Kruskal-Wallis as well as chi-square - the test statistic for establishing the independence of the variables under scrutiny. These statistical techniques were seen to help the study uncover a wide range of measures that define the perceived appropriateness (or value) of belonging to CIAT as a professional body. The antithesis is that where there is improved understanding through effective and strategic management, the factors likely to hinder institutional change are identifiable; these are further discussed in turn.

VaDIc1: Transparency and professionalism

This factor represents the perceived value in belonging to an organisation which provides specialist training to its members either through a university programme or a series of industry-relevant CPD events. Members want to see the exclusivity and specialism acquired as this is what distinguishes them from other professional bodies.

VaDIc2: Continued access to professional services –CPD-

Recruitment of members is also heavily reliant on the services the professional body can offer to its membership. In a competitive market, it is critical for CIAT to ensure that some of its core areas of interest are not saturated by interests from other professional bodies. For example, the extent to which CIAT positions itself in looking after the interests of small to mediums firms is the perceived

value and desirability for some membership. The changing landscape of the professional services offered and the ensuring periodicity in the technologies retained is equally critical.

VaDIc3: Protection of the discipline of technologists

In order to retain and sustain its reputation in a world where professional standards have become increasingly complex, it is critical for a professional body to continue to recruit its members to the highest standards.

VaDIc4: International recognition

The recognition of a professional body as an international institution is underpinned by its broader objectives, which reflect the local and international markets. To compete for student numbers, especially those coming from abroad, the institution must appeal to these members even before the university institutions are contacted.

VaDIc5: Professional designation and standing in society

On one part, a university seeks the prequalification process for its student's members as the primary root of attracting international students. Therefore, thinking about the competencies to professional qualifications and employability remains fundamental attributes the students are always seeking in CIAT membership.

VaDIc6: Collaboration and inclusivity

The inclusion of these factors reflects a concern that CIAT is not reputed for undertaking frontline research with other professional bodies. This can be seen to reflect the general membership desire to see their professional body effectively discharging its regulatory obligation as an organisation that serves society at large. Its services are always in the public interest, and thus there concerns about the ongoing absence of initiatives that foster closer collaboration with other competing professional bodies. These concerns may not be unique to CIAT but point to another area where the broader membership feels all professional bodies should try to exploit. Membership is eager to see frequent interprofessional roundtable discussions and working parties in areas of common ground. This they

reckon should happen more frequently and individual institutions should not see such measures as threats to their existence or being competitive to other professional bodies.

VaDIc7: Equality and diversity

All professional bodies are suffering from recruitment and thus recruiting the right students and designated members to CIAT in the next 10 to 15 years remains critical. The challenge of demographics requires special concerted efforts of focusing mainly on small, medium companies who after all, account for the majority of students recruiters.

VaDIc8: Health welfare and safety

The issue of health and safety is one that has characterised the construction industry with 2015CDM Regulations bringing design to the fore of the production process. This puts full responsibilities in the court of architects, and architectural technicians in terms of their professional responsibility and the indemnity associated with the role. It is, therefore, not a surprise that the membership seeks reassurance that the professional body should shoulder the responsibility in ensuring that sufficient aptitudes and training are provided by universities and that industry is firmly aligned to ensure chartered members are also provided with the skills necessary to carry the role of the designer under 2015CDM Regulations.

VaDIc9: Innovation and creativity

“The war for talent is very different in the current climate compared to 10 or 20 years” (CIAT, 2018a). This quote shows that the executive is aware that they have to retain a competitive strategy and to align CIAT with other professional bodies to compete to attract the most gifted design technologists to the institution.

VaDIc10: Quality and standards

The professional body has already noted that the pool of students coming into membership has been on the decline (CIAT 2006; 2011b) and further stated that without strategies to ensure the continuing inflow of appropriate entrants to the profession, then clearly the relevance of the institution and its

standing and role in society is likely to suffer. The inclusion of this factor among the twelve shows this as an area that adds value to the institution.

VaDIc11: Integrity and ethical behaviour

The inclusion of this factor shows that the membership expects CIAT to provide technical updates, best practice guidance, advice on ethical matters and broader services, including assistance on soft skills. These areas should ultimately raise the perceived quality of service that is offered to the members who want to use their membership as a tool for retaining the competitive advantages to their peers.

VaDIc12: An anchor for business growth and prosperity

As a value-desirability factor, this reflects the demand for CIAT to focus on the extent to which it can benefit from actively communicating its corporate strategy to demonstrate the value-desirability targeted for small and medium firms. The placement of value and appropriateness for being a fully subscribed SME outfit should be visible in its corporate policymaking. Among SMEs, the expectation that the institution should also be aware of the broad economic challenges faced by business outfits and therefore institute initiatives that can lend support is the propensity to increase the perceived value-desirability for SMEs. This perception of CIAT's attractiveness and relevance to the membership is directly proportional to value-desirability and the appropriateness of loyalty given to their professional body.

5.4 Ranking of the perceived value and desirability for Institutional change -VaDIc

In order to understand the membership perception of the value and desirability factors which CIAT must take and initiate as its priorities, it was critical to ask the membership to have a say as to which factors they considered more relevant to their improving the value and desirability placed on their professional body.

In generating further meaningful evaluation, data is teased at the aggregate level to allow the

generation of hypotheses, all of which should help in uncovering what defines value-desirability and appropriateness of CIAT membership. The objective was to establish consensus from the ranks on what membership perceived as areas of focus for developing value-desirability factors as necessary ingredients to driving institutional change. The information generated following this depth of analyses will inform the executive of CIAT on how to strategize and innovate in order to bring about improved perception of value and thus the desire for institutional change. This is beneficial for the following reasons:

- i. A collection of value-desirability factors should help the study to develop a conceptual measure or yardstick for the definitive actions the membership appear to attach when seeking membership to belong to a professional body which they hold in the highest regard;
- ii. The statistical techniques will allow the study to reveal as well as validate a possible set of measures that can give meaning and appropriateness of belonging to CIAT as a professional body. Conversely, knowing what actions are preferred will likewise, reveal which ones are not so favourable. The latter is just as useful, as it will help the study to comprehend areas likely to hinder a successful institutional change.
- iii. It will also help to establish the extent to which independent variables such as: ‘route to membership’ as a multivariate factor can be expressed as a bivariate factor, namely ‘chartered designation’, and ‘non-chartered designation’; and thus along with other variables such as ‘industry experience’; ‘periodicity of membership subscription’ how all of these can be used to stimulate further understanding of whether notable variations prevail to influence the ranking of factors that underpin institutional change management.
- iv. Critical in undertaking the above analysis is the extent to which the findings can inform the conceptual model for this study relating to institutional change.

Given the aforesaid, more so that, institutional change is one of continuing national debate among the executive of CIAT (CIAT 2018b), the study will attempt to explore the above four areas.

Using the above criteria and as shown in Table 5.1, 12 factors were clearly distinguished from the open-ended questions staged at the pilot stages. The final list, therefore, comprises factors professed as significant and thus contributory to the definition of the ‘value-desirability’ and therefore instrumental and integral to those who seek CIAT membership. The list helps to crystallise those factors that define the significance of perceived ‘value’ and ‘desirability’ dimensions using descriptors against which the respondents would provide a rank score based on a Likert scale of 1 to 5, where 1 = very insignificant, 2 = insignificant, 3 = undecided, 4 = significant and 5 = very significant.

In Table 5.1, high mean values reflect the best significant outcomes possible and likewise more likely to influence the perceived value-desirability for institutional change.

Table 5.1 Description of Perceived value and desirability for institutional change to CIAT membership (VaDIc)

| | | Sample N = 214 | | |
|---------|---|----------------|------|---|
| | Description of factors driving institutional change - FaDiC | mean score | Rank | Implied meaning |
| VaDIc5 | Professional designation and standing in society | 4.932 | 1 | <i>Perceived professional relevance of CIAT</i> |
| VaDIc1 | Transparency and professionalism | 4.670 | 2 | |
| VaDIc3 | Protection of the discipline of technologists | 4.450 | 3 | |
| VaDIc4 | International recognition | 4.225 | 4.5 | <i>Investment in the provision of technical services</i> |
| VaDIc10 | Quality and standards | 4.225 | 4.5 | |
| VaDIc2 | Continued access to professional services -CPD | 4.200 | 6 | |
| VaDIc6 | Collaboration and inclusivity | 4.175 | 7 | <i>Adopt a business-like via innovation and creativity strategies</i> |
| VaDIc9 | Innovation and creativity | 4.100 | 8 | |
| VaDIc12 | An anchor for business growth and prosperity | 4.075 | 9 | |
| VaDIc11 | Integrity and ethical behaviour | 3.950 | 10 | <i>Meet the changing needs of membership, society and market</i> |
| VaDIc7 | Equality and diversity | 3.825 | 11 | |
| VaDIc8 | Health welfare and safety | 3.025 | 12 | |

Table 5.1 shows the resulting rank order as discerned at the aggregate level. Perhaps as expected, in their own experience, the factors at the top of Table 5.1 are discerned to be ‘very significant.’ In contrast, any factors at the bottom of the table have less significance in contributing to the value-desirability of CIAT membership Table 5.2 depict the implied definitions summarised under three headings. The follow-on sections outline these in turn.

5.5 Aggregate ranking for perceived value and desirability for institutional change

1. Perceived professional relevance of CIAT: This is the combined effect of members desire to ensure the designation of the institution and its role in society is maintained so that its international

reputation and recognition is maintained. To do this, CIAT must invest in strategies that promote the perception of the discipline of Architectural technologists.

The summary of the 12 value desirability factors presented to the respondents is summarised into four headings, as shown in Figure 5.1.

Value desirability factor 1 (perceived professional relevance & reputation of CIAT): The first factor is the one that combines both the exogenous and endogenous factors: This is a value and desirability factor readily associated with the external reputation associated with CIAT. In other words, how does CIAT appeal to the outside world? What do the aspiring candidates for CIAT see and admire the most and which acts as a lure to seeking membership of the professional body? This is looking from the outside. Do the members looking in from the outside admire CIAT for what it offers to its membership?

This factor acts as a reminder to the CIAT executive that the respondents are unanimous in representing their views that CIAT needs to endorse initiatives which bolster its reputation and that the carrier of messengers for this are the very members of CIAT. This finding acts as a reminder that for any institutional change to take place and effectively, the professional relevance of CIAT remains critical to the broad membership and this must be embraced as a value desirability factor. As earlier intimated, the exogenous perception (from the outside) of the reputation of CIAT gives

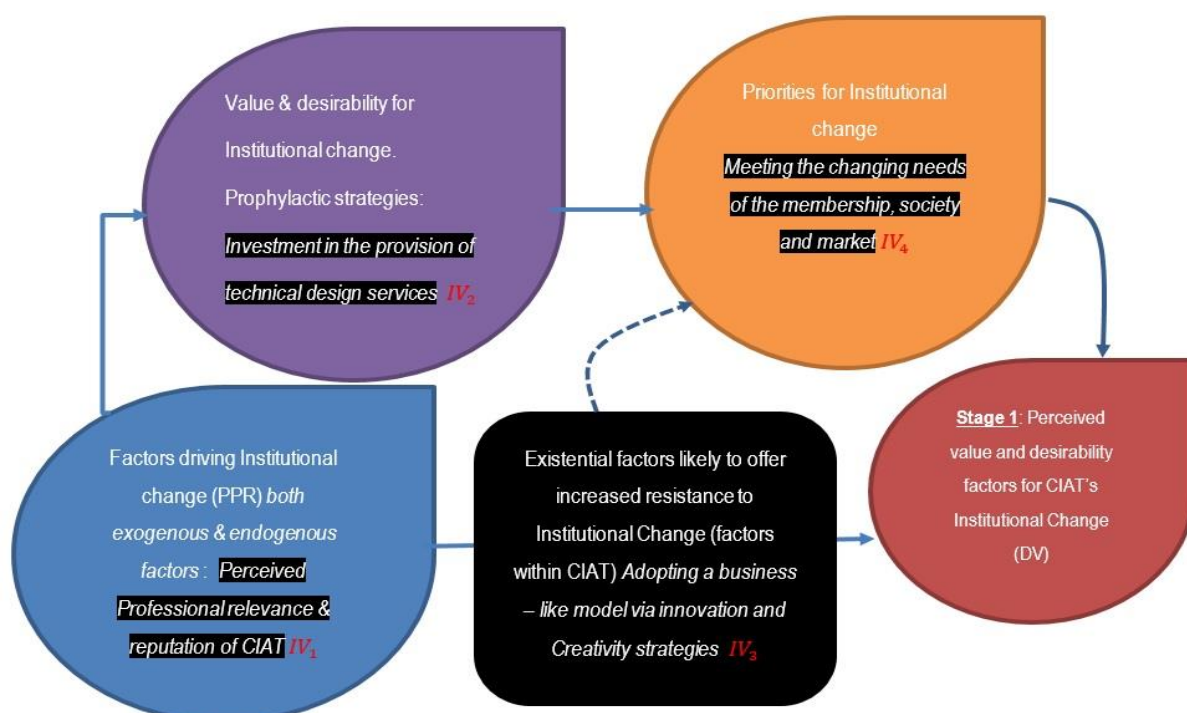


Figure 5.1: Value-desirability factors as existential elements to institutional change

pride to the core membership, and this must be preserved and sustained. In response, it is critical for CIAT to bolster initiatives that portray a good image of how CAIT values its membership; this has to be notable through initiatives which improve one's desirability to remain a fully paid up members of the professional body (IV_1).

Value desirability factor 2 (investment in the provision of technical design services): this is defined as access to professional design services that individuals or small to medium firms attain as part of their CIAT membership. Figure 5.2 below depicts a sponsorship initiative that CIAT runs, which is seen to typify the value-desirability factor 2 for this study. In the light of the incentives shown, a small design outfit, with access to a branded sponsor, taps into a wider audience attracted to the CIAT website. CIAT, in this case, would act as a marketing tool, and the benefits are priceless.

Value desirability factor 3 (knowledge of the existential factors for resistance – if CIAT adopts a business-like model in the provision of its services)

It is clear from Figure 5.1 that for every institutional change management, knowledge of the areas likely to negate the efforts towards institutional change enables the executive to prepare and put countermeasures in place. The move towards a business-like model is a typical example of an area where every professional organisation finds as an obstacle. This is not surprising given that all professional bodies are 'not for profit organisations' and therefore not keen to treat its membership as ordinary customers. This is another reminder that as a professional body, CIAT has to remain strategic and configure alternative avenues for improving its revenue collection.



Value desirability factor 4 (meeting the ever-changing needs of the membership, society and market trends)

This value desirability factor points to the fact that one of the priorities of CIAT lies in its mission statement as a professional body: to fulfil the needs of its core membership (the architectural technologists), and that of society. The continuous review of CIAT's formal aims and values of CIAT projects to outsiders that as an entity, the institution is current and more likely to respond to changes in the built environment changes and that of global society at large.

The above 4 value-desirability factor point to key issues that are critical to institutional change management for CIAT. The factors represent the four pillars that are forward-looking for the organisation, namely:

1. Perceived professional relevance & reputation of CIAT
2. Investment in the provision of technical design services
3. Knowledge of the existential factors for resistance – if CIAT adopts a business-like model in the provision of its services
4. Striving to meet the ever-changing needs of the membership, society and market trends.

5.6 Establishing the extent of unanimity in the ranking of VaDIc

The previous section identified the order and importance placed on factors perceived to impact on the perceived value and desirability for institutional change. This section will examine how architectural technicians differ or correlate in their ranking of factors perceived to induce perceived value and desirability for institutional change. In order to do this effectively, the study set itself a research question:

Does the length of CIAT membership influence the respondents' perception of the value-desirability factors critical for institutional change?

In order to answer the above question, the extent of agreement among the respondents with varying years of CIAT membership needed to be established. The objective is to monitor how respondents compare in the ranking of factors (presented earlier in Table 5.1) and whether or not length of CIAT membership has a bearing on the perceived value-desirability factors for institutional change.

The study opted to split the participants into two groups: respondents with less or equal to 14 years of CIAT membership and those with 15 years and above. The objective of undertaking this Bivariate analysis was to establish whether the length of CIAT membership (as an independent variable) influences the perception respondents have about the value-desirability factors critical to institutional change (VaDIc).

5.6.1 Rank correlation on VaDic relative to Years of CIAT membership

In an attempt to ensure the study can tease out the effect of years of CIAT membership on the perceived value and desirability for institution change, a set of hypothesis had to be set using a two-tailed approach as shown below in Figure 5.3.

- X : ranks of practitioners with up to 14 years' CIAT membership
- Y : ranks of practitioners with 15 years' and over of CIAT membership.

Likewise, the following Null hypothesis and Alternative hypothesis are identified, namely:

Null Hypothesis:

H_0 : No association in the ranking of VaDic exists between the two groups of respondents.

Alternative Hypothesis:

H_1 : There is an association in the ranking of VaDic between the two groups of respondents.

To explore any association in the ranks provided by the two camps of respondents, the study adopted the use of Spearman rank correlation. The test is ideal for handling ranked data and thus an appropriate method to help the study to establish whether large values of VaDic ranks are those of members with less than fourteen years or those with greater than 15 years of CIAT membership.

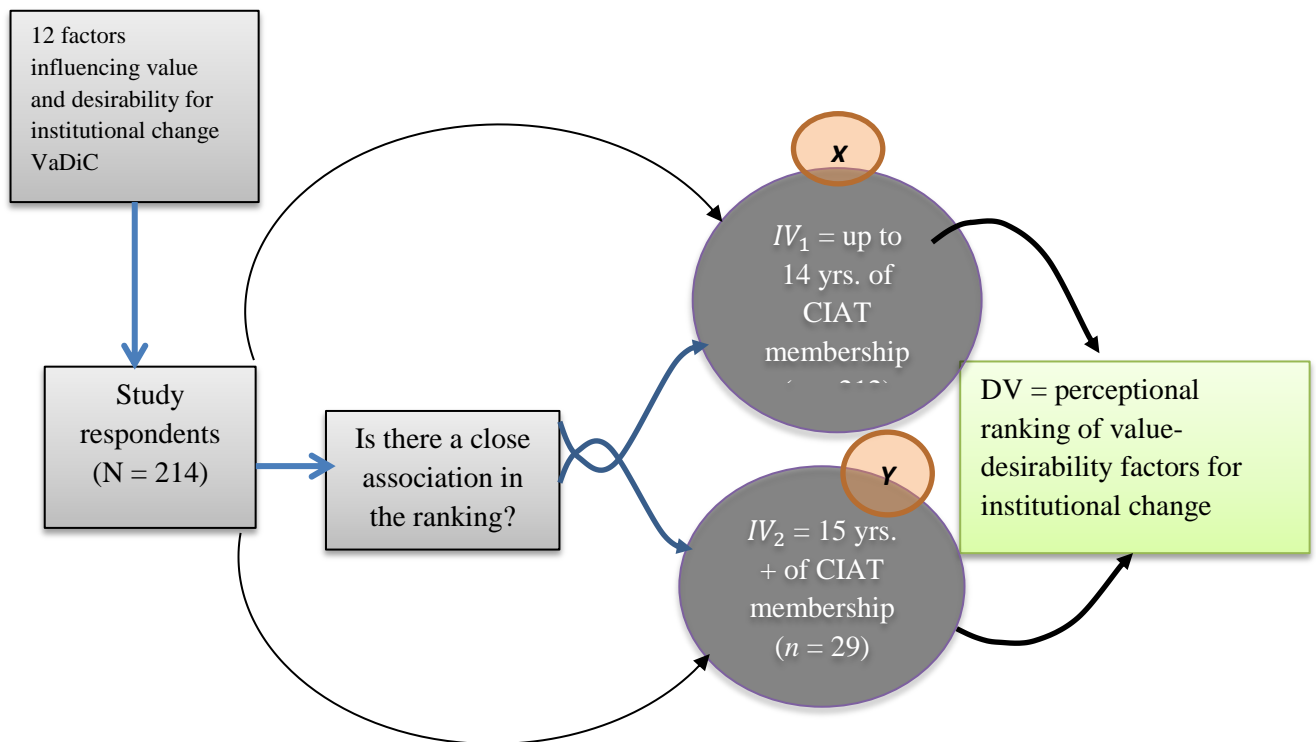


Figure 5.3: Depiction of a two-tail hypothesis on ranking of factors influencing value and desirability factors for institutional change relative to years of CIAT membership

The annual report for 2015/16 report by CIAT (CIAT, 2016) has hinted that the majority of the membership for CIAT are those that have remained loyal for a period up to 14years. In this study, 88% of the respondents fall in this category; implying only 22% of respondents had remained full paid-up member for 15 years and more.

5.6.2 Bivariate analysis:

Howitt and Cramer (2011) outlined a bivariate study as one that should begin by establishing the sample mean parameter for each item, and that this becomes the most attuned order for the whole data and any further interpolations must be compared to the mean on this basis. The typical position taken by all the 241 respondents is set out, for clarity, in Figure 5.3. This constraint informed the choice of Spearman's (r_s) rank correlation coefficient test, as the most appropriate measure of how well respondents with characteristics of X ($n = 212$) and Y ($n = 29$) (see Table 5.2 below) agreed in the ratings they enlisted to the twelve VaDIc factors.

The Spearman rank correlation coefficient is given by the formula:

$$r_s = 1 - \frac{6\sum d^2}{n(n^2-1)}$$

Where:

- n is the aggregate mean numbers; n is the total number of ranking for each group;
- d is the difference between X and Y ranks given as: $R(X)-R(Y)$;
- r_s is the Spearman's rank correlation which measures the extent of linear agreement between X and Y variables.

Table 5.2, therefore, presents the results of the analysis of the groups based on years of CIAT membership. The Table also presents the Mean values of VaDIc between the two independent variables by arranging the values in descending order and according to the rank order determined earlier in Table 5.1 against the aggregate sample $N = 241$.

The test of hypothesis, after Howitt and Cramer (2011) is based on a Spearman rank correlation of r_s , which is set at a significance level of $\alpha = .05$ where $n = 12$. The test procedure is to ultimately reject the null hypothesis (H_0) if $r_s > 0.503$ the value obtained from the two-tailed test Table in Appendix E2; for the critical values of Spearman's rank correlation coefficients.

Table 5.2: Comparative ranking on VaDlc relative to length of CIAT membership

| | Years of CIAT membership | | | | Difference of ranks | |
|---------|--------------------------|-------------|--------------------|-------------|---------------------|-----------------------|
| | X n = 212 | | Y n = 29 | | | |
| | up to 14 yrs | <i>rank</i> | 15yrs + | <i>rank</i> | (<i>d</i>) | <i>d</i> ² |
| VaDlc5 | 4.4 | 2 | 4.5 | 1 | 1 | 1.00 |
| VaDlc1 | 4.5 | 1 | 4.35 | 2 | -1 | 1.00 |
| VaDlc3 | 4.35 | 3 | 4.25 | 3 | 0 | 0.00 |
| VaDlc4 | 4.25 | 7.5 | 4.2 | 4.5 | 3 | 9.00 |
| VaDlc10 | 4.3 | 5 | 4.15 | 6.5 | -1.5 | 2.25 |
| VaDlc2 | 4.3 | 5 | 4.2 | 4.5 | 0.5 | 0.25 |
| VaDlc6 | 4.25 | 7.5 | 4.1 | 8 | -0.5 | 0.25 |
| VaDlc9 | 4.05 | 10 | 4.15 | 6.5 | 3.5 | 12.25 |
| VaDlc12 | 4.3 | 5 | 3.85 | 10 | -5 | 25.00 |
| VaDlc11 | 4.1 | 9 | 3.8 | 11 | -2 | 4.00 |
| VaDlc7 | 3.75 | 11 | 3.9 | 9 | 2 | 4.00 |
| VaDlc8 | 2.8 | 12 | 3.25 | 12 | 0 | 0.00 |

$$\sum d^2 = 59.00$$

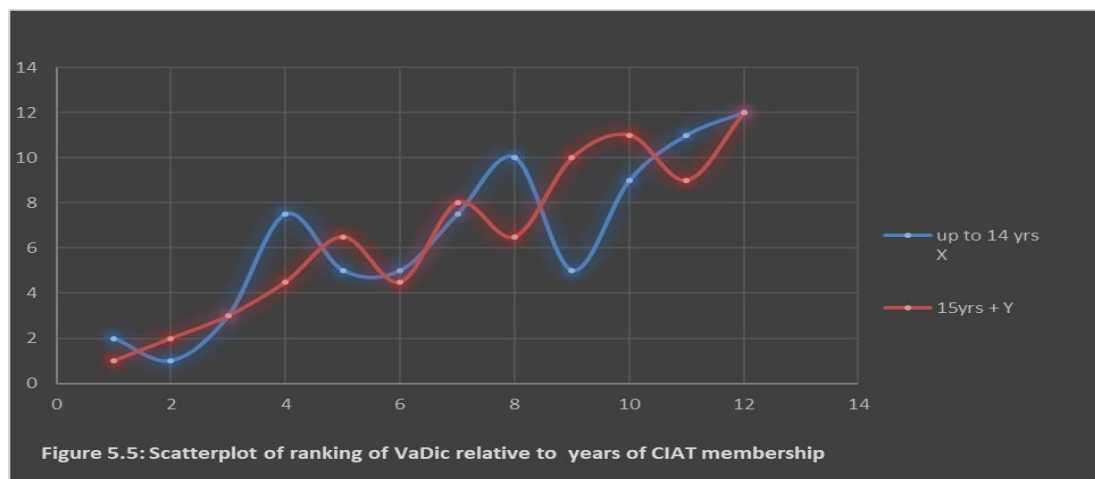
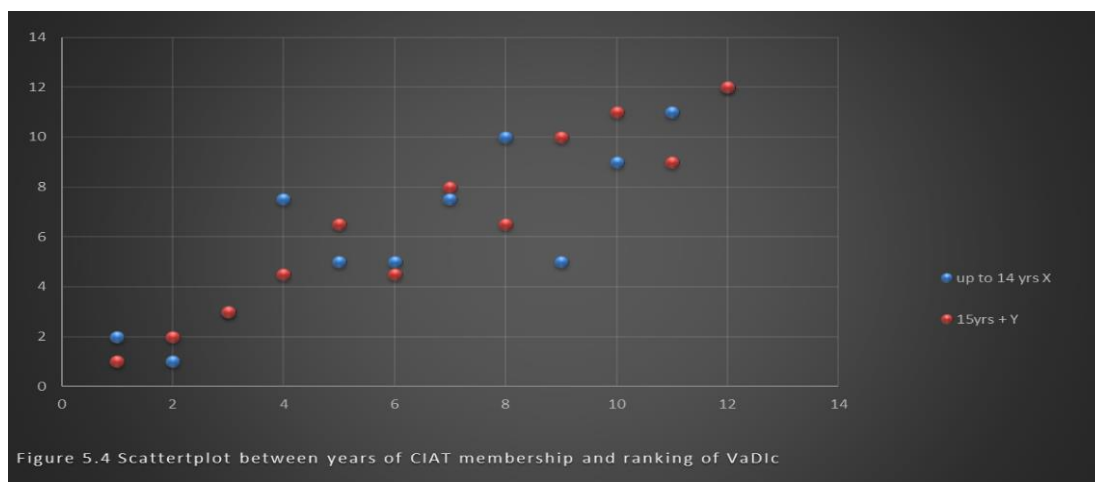
Accordingly, using the derived sum of the squared difference in Table 5.3, the Spearman rank correlation, as calculated from the equation below, gives an r_s correlation value of 1, denoting a perfect agreement.

$$r_s = 1 - \frac{6(59)}{12(12^2 - 1)}$$

$$r_s = 1 - \frac{354}{1716}$$

$$r_s = 0.7937$$

As the test statistic follows a critical Table value of the Spearman's rank correlation coefficient of (α) 0.05 and given as above $r_s = 0.7937$, the study proceeds to conclude that the computed Spearman's rank correlation coefficient of 0.7937 far exceeds the Table value of **0.538**. As a consequence, the study proceeds to reject the Null (H_0) in favour of the alternative (H_1) hypothesis, implying the two sets of respondents are inseparable. As the pairwise ranks generate a positive linear relationship, this would suggest - as further endorsed by the scatter plot in Figure 5.4 below and the line graphs connecting the scatter points in Figure 5.5 – (which are both, mostly positive).



Their closeness of the ranks (further shown in Table 5.3 below) suggests that in so as far as ‘years of membership-factor’ is concerned; it is not conclusive as to the extent to which these factors impact on the significance of the value-desirability factors for institutional change. This position is also informed by the fact that respondents in either cam (Figure 5.3) can identify the factors that

determine the perceived value and desirability benefits enshrined in CIAT membership. Indeed, even in real-time, by the time someone has spent more than two years of sustained CIAT membership, such members will have already identified or recognised the perceived value and desirability for having a professional recognition in the Architectural Design services.

The results are thus not unexpected or out of the ordinary. A further comparative analysis is shown in Table 5.4, where respondents could be teased based on the years of experience and areas of AT specialism.

Table 5.3: closeness in the ranking of VaDic relative to length of CIAT membership

| | up to 14 yrs | 15yrs + |
|---------|--------------|---------|
| | X | Y |
| VaDic5 | 2 | 1 |
| VaDic1 | 1 | 2 |
| VaDic3 | 3 | 3 |
| VaDic4 | 7.5 | 4.5 |
| VaDic10 | 5 | 6.5 |
| VaDic2 | 5 | 4.5 |
| VaDic6 | 7.5 | 8 |
| VaDic9 | 10 | 6.5 |
| VaDic12 | 5 | 10 |
| VaDic11 | 9 | 11 |
| VaDic7 | 11 | 9 |
| VaDic8 | 12 | 12 |

Despite the above outcome, it was felt necessary to explore furthermore if any variation in the perceptions of value-desirability factors can be discerned by various areas of specialisms. CIAT membership can Areas of Architectural Specialism (AAS)'. In this study and as shown in cross-tabulation of Table 5.4, the sample is well proportioned in terms of the specialism of the respondents it captured for the study.

Table 5.4: Cross tabulation between Years of CIAT Professional Membership and Architectural Specialism

| Area of Architectural Specialism-AAS | Years of CIAT Professional Membership | | | | | Total |
|--|---------------------------------------|-------------|-------------|-------------|------------|------------|
| | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | |
| Design/Architectural Services only | 27 | 41 | 4 | 0 | 1 | 73 |
| Academic | 21 | 9 | 3 | 1 | 4 | 38 |
| Practice Management | 2 | 11 | 5 | 2 | 1 | 21 |
| Surveying, Design and Refurbishment | 9 | 48 | 8 | 13 | 5 | 83 |
| Specialist (Heritage trade sub/contractor) | 5 | 13 | 6 | 0 | 2 | 26 |
| Total | 64 | 122 | 26 | 16 | 13 | 241 |
| Percentage | | | | | | |
| AAS | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
| Design/Architectural Services only | 11.2 | 17.0 | 1.7 | 0.0 | 0.4 | 30 |
| Academic | 8.7 | 3.7 | 1.2 | 0.4 | 1.7 | 16 |
| Practice Management | 0.8 | 4.6 | 2.1 | 0.8 | 0.4 | 9 |
| Surveying, Design and Refurbishment | 3.7 | 19.9 | 3.3 | 5.4 | 2.1 | 34 |
| Specialist (Heritage trade sub/contractor) | 2.1 | 5.4 | 2.5 | 0.0 | 0.8 | 11 |
| Total | 26.6 | 50.6 | 10.8 | 6.6 | 5.4 | 100 |

5.7 Kruskal - Wallis analysis of VaDIc relative to ‘Area of Architectural Specialism’

Based on the previous analysis, the research has determined a perfect relationship in the views and/or ranks on VaDIc as provided by practitioners with less than 14 years CIAT membership pitted against those with more than 16 years CIAT membership. This section, therefore, attempts to further examine the variance in the rank order of VaDIc by evaluating the mean values associated with more than two groups of data values.

This procedure is best achieved by the use of the Kruskal – Wallis test statistic. As a procedure that is non- parametric method, it belongs to a family of multivariate analysis methods that do not assume a normal distribution of data. With Kruskal- Wallis, the aim is to detect any variance in the mean rank values associated with more than two groups of respondents. This is a more robust method and builds further on the Bivariate approach undertaken under the Spearman correlation, which effectively helped to detect the degree of association between two sets of respondents. The Kruskal-Wallis, on the one hand, is the equivalent of ANOVA. According to Kumar (2019), it is named after two statisticians: William Henry Kruskal and Wilson Allen Wallis, who developed the technique way back in 1952.

5.7.1 Assessment of the pooled VaDIc ranks

Table 5.4 identified the five groups and used these to appraise whether the scale of refurbishment works impacts on the ranking of factors perceived to impact on the quality of refurbishment outcomes. The Kruskal-Wallis procedure requires that the mean values are ranked from largest to smallest - across the three groups - in order to determine their ranked positions per K groups; the values from the three groups (as shown in Table 5.4) are then pooled and arranged accordingly and in the rank order by assigning their relative rank values. Also, in case of ties in the ranking, an average of the tied position is assigned.

The value of the KW statistic follows a chi-square distribution with $k - 1$ df and is calculated from the formula:

$$KW = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{T_i^2}{n_i} - 3(n+1)$$

Where T_i is the total of the ranks from the ' i ' sample.

5.7.2 Test of Hypothesis under Kruskal Wallis

In order to disprove and approve the hypothesis, across the independent groups that are either related or not related, the analysis of variance offers an opportunity to compare the mean rank positions of respondents from various Areas of Architectural Specialism across the five K groups. The factors are defined by the hypotheses relating to the 12 VaDIc factors, as presented in Table 5.4. These are set out on a two-tailed basis, as outlined below.

Null Hypothesis:

H_0 : *K Respondents Areas of Architectural Specialism* have identical ranks on VaDIc;

Alternative Hypothesis:

H_1 At least two of the K groups differ in their ranks on VaDIc.

The procedure is to reject the H_0 if computed KW is $> \chi^2_{\alpha, df}$; the critical value of Chi-square curve set at the significance level $(\alpha) = 0.05$; similarly the test statistic is expressed as providing outcomes tested at (ρ) 95% confidence level and 4 degrees of freedom $(df) = K - 1$. As the intervening variable is split into 5 groups, $df = 5 - 1 = 4$.

Table 5.5 shows the pooled mean scores across the K groups by the number of VaDIc factors (12). This means that in total, there will be $[12 * 5 =]$ 60 pooled items critical to the computation and derivation of the Kruskal –Wallis value. The respective groups are colour-

Table 5.5: Pooled factors contributory to increased value and desirability for Institutional change

| Pooled variables | Factors | Mean value | Area of Architectural Specialism-AAS |
|------------------|----------------|--------------|---|
| 1 | VaDIc5 | 4.57 | Design/Architectural Services only |
| 2 | VaDIc1 | 4.86 | |
| 3 | VaDIc3 | 4.43 | |
| 4 | VaDIc4 | 4.57 | |
| 5 | VaDIc10 | 4.43 | |
| 6 | VaDIc2 | 4.43 | |
| 7 | VaDIc6 | 4.43 | |
| 8 | VaDIc9 | 4.57 | |
| 9 | VaDIc12 | 4.43 | |
| 10 | VaDIc11 | 4.29 | |
| 11 | VaDIc7 | 4.00 | |
| 12 | VaDIc8 | 2.86 | |
| 13 | VaDIc5 | 4.20 | Academic |
| 14 | VaDIc1 | 4.60 | |
| 15 | VaDIc3 | 4.20 | |
| 16 | VaDIc4 | 4.40 | |
| 17 | VaDIc10 | 4.00 | |
| 18 | VaDIc2 | 4.60 | |
| 19 | VaDIc6 | 4.20 | |
| 20 | VaDIc9 | 4.00 | |
| 21 | VaDIc12 | 4.40 | |
| 22 | VaDIc11 | 3.60 | |
| 23 | VaDIc7 | 3.80 | |
| 24 | VaDIc8 | 3.00 | |
| 25 | VaDIc5 | 4.5 | Practice Management |
| 26 | VaDIc1 | 4.5 | |
| 27 | VaDIc3 | 4.75 | |
| 28 | VaDIc4 | 4.5 | |
| 29 | VaDIc10 | 4.25 | |
| 30 | VaDIc2 | 4.5 | |
| 31 | VaDIc6 | 4.25 | |
| 32 | VaDIc9 | 4 | |
| 33 | VaDIc12 | 4.25 | |
| 34 | VaDIc11 | 4.25 | |
| 35 | VaDIc7 | 4 | |
| 36 | VaDIc8 | 3.75 | |
| 37 | VaDIc5 | 4.533 | Surveying, Design and Refurbishment |
| 38 | VaDIc1 | 4.467 | |
| 39 | VaDIc3 | 4.33 | |
| 40 | VaDIc4 | 3.93 | |
| 41 | VaDIc10 | 4.13 | |
| 42 | VaDIc2 | 4.00 | |
| 43 | VaDIc6 | 4.33 | |
| 44 | VaDIc9 | 4.00 | |
| 45 | VaDIc12 | 3.93 | |
| 46 | VaDIc11 | 4.00 | |
| 47 | VaDIc7 | 3.73 | |
| 48 | VaDIc8 | 2.80 | |
| 49 | VaDIc5 | 4.33 | Specialist (Heritage trade sub/contractor) |
| 50 | VaDIc1 | 3.89 | |
| 51 | VaDIc3 | 4.00 | |
| 52 | VaDIc4 | 4.22 | |
| 53 | VaDIc10 | 4.33 | |
| 54 | VaDIc2 | 4.11 | |
| 55 | VaDIc6 | 4.00 | |
| 56 | VaDIc9 | 4.00 | |
| 57 | VaDIc12 | 3.73 | |
| 58 | VaDIc11 | 3.67 | |
| 59 | VaDIc7 | 3.78 | |
| 60 | VaDIc8 | 3.23 | |

coded to allow for the ease with which the ranks are generated and allotted, as shown in Table 5.5, i.e. from highest to the lowest-ranked factors based on the respective mean scores.

Therefore to reiterate, Table 5.5 relies on the mean values in the pool and from which the respective ranks are generated and allotted across all the 60 VaDIc factors. The resulting order in Table 5.5 also takes into account tied mean scores to compute the tied positions. Once the order is established, as in Table 5.5, then the sum of the allotted ranks is generated within each group of K across the 12 VaDIc factors resulting in Table 5.7.

The sum of T is the total of the summed rank positions in each group as depicted in Table 5.6. In other words, as there are 5 K groups, the resulting sum of the ranks is allotted as $T_1 - T_5$ respectively. Henceforth the group with the smallest sum is the group presumed to have brought home the most highly ranked factors under T and similarly the group with the largest sum of the total T is considered to have brought home factors predominantly perceived as the least important factors within the 60 pooled VaDIc factors.

Table 5.6. Rank order of pooled factors contributory to increased value and desirability for Institutional change

| | | Mean score | Alloted Pooled Rank |
|----|----------------|--------------|------------------------|
| 1 | VaDIc1 | 4.86 | 1 |
| 2 | VaDIc3 | 4.75 | 2 |
| 3 | VaDIc1 | 4.60 | 3.5 |
| 4 | VaDIc2 | 4.60 | 3.5 |
| 5 | VaDIc5 | 4.57 | 6 |
| 6 | VaDIc4 | 4.57 | 6 |
| 7 | VaDIc9 | 4.57 | 6 |
| 8 | VaDIc5 | 4.533 | 8 |
| 9 | VaDIc5 | 4.5 | 10.5 |
| 10 | VaDIc1 | 4.5 | 10.5 |
| 11 | VaDIc4 | 4.5 | 10.5 |
| 13 | VaDIc1 | 4.467 | 13 |
| 14 | VaDIc3 | 4.43 | 16 |
| 15 | VaDIc10 | 4.43 | 16 |
| 16 | VaDIc2 | 4.43 | 16 |
| 17 | VaDIc6 | 4.43 | 16 |
| 18 | VaDIc12 | 4.43 | 16 |
| 19 | VaDIc4 | 4.40 | 19.5 |
| 20 | VaDIc12 | 4.40 | 19.5 |
| 21 | VaDIc3 | 4.33 | 22.5 |
| 22 | VaDIc6 | 4.33 | 22.5 |
| 23 | VaDIc5 | 4.33 | 22.5 |
| 24 | VaDIc10 | 4.33 | 22.5 |
| 25 | VaDIc11 | 4.29 | 25 |
| 26 | VaDIc10 | 4.25 | 27.5 |
| 27 | VaDIc6 | 4.25 | 27.5 |
| 28 | VaDIc12 | 4.25 | 27.5 |
| 29 | VaDIc11 | 4.25 | 27.5 |
| 30 | VaDIc4 | 4.22 | 30 |
| 31 | VaDIc5 | 4.20 | 32 |
| 32 | VaDIc3 | 4.20 | 32 |
| 33 | VaDIc6 | 4.20 | 32 |
| 34 | VaDIc10 | 4.13 | 34 |
| 35 | VaDIc2 | 4.11 | 35 |
| 36 | VaDIc7 | 4.00 | 41 |
| 37 | VaDIc10 | 4.00 | 41 |
| 38 | VaDIc9 | 4.00 | 41 |
| 39 | VaDIc9 | 4 | 41 |
| 40 | VaDIc7 | 4 | 41 |
| 41 | VaDIc2 | 4.00 | 41 |
| 42 | VaDIc9 | 4.00 | 41 |
| 43 | VaDIc11 | 4.00 | 41 |
| 44 | VaDIc3 | 4.00 | 41 |
| 45 | VaDIc6 | 4.00 | 41 |
| 46 | VaDIc9 | 4.00 | 41 |
| 47 | VaDIc4 | 3.93 | 47.5 |
| 48 | VaDIc12 | 3.93 | 47.5 |
| 49 | VaDIc1 | 3.89 | 49 |
| 50 | VaDIc7 | 3.80 | 50 |
| 51 | VaDIc7 | 3.78 | 51 |
| 52 | VaDIc8 | 3.75 | 52 |
| 53 | VaDIc7 | 3.73 | 53.5 |
| 54 | VaDIc12 | 3.73 | 53.5 |
| 55 | VaDIc11 | 3.67 | 55 |
| 56 | VaDIc11 | 3.60 | 56 |
| 57 | VaDIc8 | 3.23 | 57 |
| 58 | VaDIc8 | 3.00 | 58 |
| 59 | VaDIc8 | 2.86 | 59 |
| 60 | VaDIc8 | 2.80 | 60 |

Table 5.7: Rank order of Pooled factors of perceived value and desirability for institutional change
Areas of Architectural Specialism (AAS)

| | AAS1 | Rank | AAS2 | Rank | AAS3 | Rank | AAS4 | Rank | AAS5 | Rank |
|---------|---------------|------|---------------|------|---------------|------|-----------------|------|-----------------|------|
| VaDlc5 | 4.57 | 6 | 4.20 | 32 | 4.5 | 10.5 | 4.533 | 8 | 4.33 | 22.5 |
| VaDlc1 | 4.86 | 1 | 4.60 | 3.5 | 4.5 | 10.5 | 4.467 | 13 | 3.89 | 49 |
| VaDlc3 | 4.43 | 16 | 4.20 | 32 | 4.75 | 2 | 4.33 | 22.5 | 4.00 | 41 |
| VaDlc4 | 4.57 | 6 | 4.40 | 19.5 | 4.5 | 10.5 | 3.93 | 47.5 | 4.22 | 30 |
| VaDlc10 | 4.43 | 16 | 4.00 | 41 | 4.25 | 27.5 | 4.13 | 34 | 4.33 | 22.5 |
| VaDlc2 | 4.43 | 16 | 4.60 | 3.5 | 4.5 | 10.5 | 4.00 | 41 | 4.11 | 35 |
| VaDlc6 | 4.43 | 16 | 4.20 | 32 | 4.25 | 27.5 | 4.33 | 22.5 | 4.00 | 41 |
| VaDlc9 | 4.57 | 6 | 4.00 | 41 | 4 | 41 | 4.00 | 41 | 4.00 | 41 |
| VaDlc12 | 4.43 | 16 | 4.40 | 19.5 | 4.25 | 27.5 | 3.93 | 47.5 | 3.73 | 53.5 |
| VaDlc11 | 4.29 | 25 | 3.60 | 56 | 4.25 | 27.5 | 4.00 | 41 | 3.67 | 55 |
| VaDlc7 | 4.00 | 41 | 3.80 | 50 | 4 | 41 | 3.73 | 53.5 | 3.78 | 51 |
| VaDlc8 | 2.86 | 59 | 3.00 | 58 | 3.75 | 52 | 2.80 | 60 | 3.23 | 57 |
| | <u>T1 224</u> | | <u>T2 388</u> | | <u>T3 288</u> | | <u>T4 431.5</u> | | <u>T5 498.5</u> | |

The test statistic is to check the Table value for Chi-square as given in Appendix E2; the procedure is to reject H_0 if KW is $>\chi_{0.5,2}^2 = 5.99$, hence, from the values sourced in Table 5.6 KW unfolds as follows:

$$\begin{aligned}
 & \frac{12}{n(n+1)} \left[\frac{224^2}{12} + \frac{388}{12} + \frac{288^2}{12} + \frac{431.5^2}{12} + \frac{498.5^2}{12} \right] - 3(n+1) \\
 & \frac{12}{60(61)} \left[\frac{224^2}{12} + \frac{388}{12} + \frac{288^2}{12} + \frac{431.5^2}{12} + \frac{498.5^2}{12} \right] - 3(60+1) \\
 & \frac{12}{(3660)} \left[\frac{50176}{12} + \frac{150544}{12} + \frac{82944}{12} + \frac{186192.25}{12} + \frac{248502.25}{12} \right] - 183 \\
 & 196.27 - 183 \\
 & \mathbf{KW = 13.27}
 \end{aligned}$$

The computed value of **13.27** far exceeds the chi-square Table value of 5.99 at a significance level of 0.05 and 2 degrees of freedom. Thus given the computed KW value is less than 9.48 (as per the chi-square Table value in Appendix E2 at 4 degrees of freedom) the study rejects the H_0 in favour of H_1 and proceeds to conclude there is sufficient evidence to suggest at least two of the K groups (Areas of Architectural Specialism) Design /architectural services and those in Practice Management both represent small to medium size of organisations.

Indeed a further inspection of Table 5.6 shows that the sum of the ranks across the two groups as being the same: $T_1 = 224$ and $T_3 = 288$. This result implies that whatever the Area of Architectural Specialism what defines the quality or success of CIAT has also some bearing on the Specialism. In other words, the value and desirability factors are processed according to the trade specialism. Those who run architectural services are closely related to those who run their practices. These two groups appear to have similar values and expectations from the CIAT – their professional bodies. Logic would suggest that the more exposed individuals and firms are offering their design and related architectural services, the more they want to access design related services that bring value to their respective organisation.

5.8 Summary and conclusion

The study has established that there is sufficient evidence that the number of years served as a fully paid up CIAT member does not affect the practitioners' perception of value and desirability for institutional change. However, when an analysis of variance is carried out, among respondents from various architectural specialisms, it emerged that individuals who supply architectural services and those who run their own practices (firms) have a lot in common and expectations of what they see as value-desirability. For these respondents, continued membership is meant to ensure they remain competitive.

Given the aforementioned, CIAT has to invest in measures that ensure SMEs are supported and have access to various design packages at a reduced rate. For these respondents, their loyalty to CIAT counts for a lot. So CIAT executive must be mindful of the need to focus on initiatives bolster the institution's reputation in the following key areas:

1. initiatives that ensure the professional relevance & reputation of CIAT is maintained;
2. options and diversification in the provision of technical design services;

3. keeping an eye on the existential factors (cases for resistance especially if CIAT adopts a business-like model in the provision of its services);
4. striving to ensure policies and terms of the organisation meet the ever-changing needs of the membership, society and market trends.

6.0 Existential factors contributory to increased resistance to institutional change

(Exfacirc)

6.1 Introduction

Chapter six considers the areas likely to give the most cause to resist institutional change. Resistance to change is synonymous with Kurt Lewin's 1951 force field model (illustrated in chapter 2, Figure 2.4). As a widely quoted model, it examines and considers the causal-drivers for accepting change and how these are distinct to those which contrive to resist change. The starting point is the need to acknowledge the nature of the human response to change. This is considered to be a dichotomy response: either for and against the reasons advanced for change. This tendency to disagree with changing comes from a lack of understanding of the merits advanced for change.

It is ingrained in us humans to seek change. Sometimes, the desire comes from being exposed to repetitive actions which generate boredom, and in executing dangerous operations, the lack of concentration, therefore susceptibility to the danger of harm. In a factory setting, for instance, where a machinist is exposed to lack of clarity on what they have to turn, the lathe machinist can resist any instruction they see as exposing them to harm. Even on changing a lathe machine to a newer and more efficient version, the ontology of humans' ability to offer resistance to change - such as learning new 'operation instructions' - might come from an unwillingness to begin to master new techniques on a new machine. According to Kanter (1989); Dasborough, Lamb and Suseno (2015) the resistance to change, maybe driven by factors some of which may be personal rather than driven by the wider interests of the machining company (or the majority). However, even at this personal level, Dasborough, Lamb and Suseno (2015) have argued that cognisance should be given to the fact that when you have 100 employees, each one of these will have their own personal desires and cumulatively, the many individual resisting attitudes can become a force to reckon with regarding change management.

Given this theoretical and ontological perspective of human nature to resist what they perceive not to be in their interest, a reminder to CIAT is for the institute, which is heavily reliant on its membership for its existence, that it is important to know which existential factors at individual membership level and collectively, generate the most disaffection. The analysis in this chapter offers the opportunity for the research to identify areas perceived as pitfalls to successful change management. It is critical to the process of change management to ensure that those factors existential to the process and likely to offer the most resistance are identified and only then can a full defence be prepared.

In earlier chapters, Ontology was defined as a branch of philosophy which examines the concept of being and addresses questions like how is it that humans have the tenacity to seek change (*the nature of being*)? Indeed, the study posited that some authors such as Dawson (2009) suggest that due to monotonous occurrence in day to day human activities the capacity to predict outcomes (whether the context is right or wrong) is simply a rational make-up of mankind (Waldersee, and Griffiths, 2004), naturally averse to repetitiousness and sameness (Rune, 2005). It appears, therefore that seeking or resisting change can be driven by the desire for change or that the measures put in place do not, necessarily, bring the benefits inspired by the movement for change. The effects of too much uniformity, as well as the lack of it, has also been cited as a trigger for change or resistance for change (Proctor, 2014). These issues create an insatiable desire to progress, improve or can also produce a force for resisting change.

6.2: The concept of resistance to change

The idea of resisting forces is all rooted in Lewin's (1947) unfreezing, Moving and Freezing model for organisational change. This model postulated that for any intentions to embrace change in an organisation, any drivers for this would meet an equal amount of negating forces which will attempt to bring down the very ambitions of bringing about change. Many researchers (Lines, et al. 2015; Erwin and Garman, 2010; and Isabella, 1990) appear to narrow down these areas into three phases, namely:

1. The cognitive dimensions: this refers to how the membership receive and respond to change, including the ensuing benefits and how they think they will perform in such new roles.
2. The affective dimension: this is the emotional or psychological reaction of the membership and how they receive the impending possibility of change
3. The behavioural dimension: This examines the actual resistance offered by the membership to change (which in a sense is the resultant of the first two dimensions)

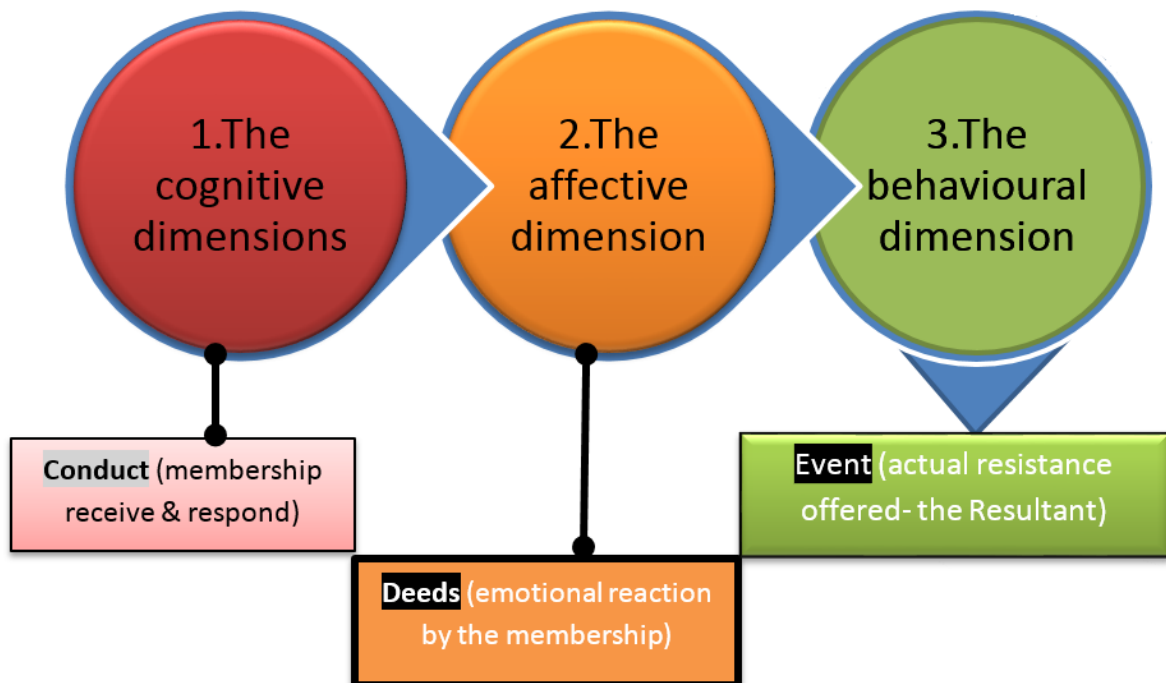


Figure 6.1: Three existential phases of resistance to change

6.3 Rank order of existential factors contributory to resistance for change

As in the preceding chapters, the exploration of Exfacirc factors is essential to the study in that these will help to:

- determine whether there is a consensus in the rank order among the practitioners;
- identify the most areas likely to offer the most resistance to change
- identify the least resisting severe factors in terms of resisting change, and this varies relative to practitioners' characteristics.

It is also good practice to identify risk factors at the inception of any project whatever the scale of the project. Any information generated as part of this process can only enable CIAT executive to identify and equip themselves with control tools necessary for the smooth transition to change management. Therefore, an important question to ask industry practitioners is: why is institutional change predicated by such resisting factors (personal and psychological) to a point where effective change is rendered ambiguous or nearly impossible to manage effectively?

Table 6.1 shows the initial factors contributory to increased resistance to institutional change as identified from the initial desk study and piloted at various stages of the research. It is also worth noting that the risk factors in Table 6.1 were randomly arranged after collapsing a total of sixteen factors corrected from discontented voices towards institutional change. The factors were subsequently collapsed into eight resisting factors, and these are shown in Table 6.1. In order to generate the mean score for each factor, as before described, a Likert scale of 0 to 5 was provided where 5 = very high resistance; 4 = high resistance; 3= moderate resistance; 2 = low resistance; 1= very low resistance, 0 = least resistance factor. On aggregate, higher mean scores represent high scoring resisting factors and thus are said to offer the most resistance to institutional change; collectively, low scoring factors are equally the ones that present the least opportunity to risks to a project.

Table 6.1: Aggregate ranking of factors contributory to increased resistance to institutional change

Sample n = 241









| | <i>Factors contributory to increased resistance to institutional change</i> | <i>mean score</i> | <i>Rank</i> | |
|-----------|---|-------------------|---|--|
| Exfacirc1 | Successful institutional change may not come easily | 4.960 |  1 | |
| Exfacirc2 | Might hinder opportunity to participate and shape the future of the institution | 4.670 |  2 | <i>Demise of established tradition</i> |
| Exfacirc7 | Change might impede the already established traditions of the institution | 4.510 |  3 | |
| Exfacirc3 | There may be hidden implications for individual membership | 4.420 |  4 | |
| Exfacirc5 | There is inadequate information about the need for this change | 4.302 |  5 | <i>Individual threats</i> |
| Exfacirc4 | Other institutions are not seeking change | 4.245 |  6 | |
| Exfacirc6 | Membership need further consultation | 4.115 |  7 | |
| Exfacirc8 | There is no disaffection with the status quo | 3.250 |  8 | <i>No relevance for change</i> |

Table 6.1 presents the aggregate perception of the factors considered. To make a meaningful interpretation of the factors, a full description for each factor contributory to increased resistance was listed in rank order. The implied meaning is offered to describe like-to-like factors based on designated terms. This analytical approach enabled the study to generate three clear definitions which are integral to the original eight factors as depicted in Table 6.1. The Key findings relating to the implied terms are now outlined in turn:

- 1. Demise of established tradition:** A closer inspection of Table 6.1 shows that the proposition for change ignited concerns that the call for change may not necessarily materialise at the expense of the tradition of the institution. The second most considered reason for resisting change was that the membership felt any change would take away the opportunity for the membership to influence the shape and future of the situation. These concerns are genuine and therefore point to areas the executive of CIAT must address before taking home the desire to change the institution.
- 2. Individual (personal) Threats:** As with every change, it is inevitable for the broad membership to ask whether the proposed change are bound to improve the incentives directed to the broad membership and whether in the stage of their career change is something they ought to be embarrassing (Line et al. 2015). This would seem to endorse the earlier findings in chapter 5 that for change to be effective, value-desirability factors must be established as well. In the light of the rank order in Table 6.1, it is the case that unless individuals see value in the reasons put forward for change on an individual membership level, the presence of resistance is one that

should be expected. The factor closest to reflecting the existential position of the membership relates to the apprehensiveness of the members which states the offer for resistance may arise from a concern that the call for change could be that there '*may be hidden implications for individual membership*'. The next existential factor is that *there is inadequate information about the need for this change*. This factor goes to show that the inevitability for the CIAT executive is for it to respond through a more comprehensive consultation and thus broader participation of the membership. The outcome also shows that the reasons for seeking change must be well sold to the members knowing that if this is not done, the quest for change might be seen as a threat rather than an opportunity to bring about better incentives for individual membership.

- 3. No noticeable relevance for change:** In outlining the challenges of change Cameron and Green (2009) have hinted that the perception of value should be associated with the perceptibility of seeking 'what next' agenda-seeking attitude. One of the factors that repeatedly came up was the issue of why a change in CIAT was even under consideration when other institutions did not feel the same way. '*Other institutions are not seeking change*'. This, in a way, poses the question, what has changed that needs to be corrected? This question aggregates the concerns that the membership often would have *Membership need further consultation* and that '*there is no disaffection with the status quo*' so why seek change. All these factors collectively point to the notion of let's not change; the relevance for change has not been well established.

It follows, therefore, that given the above, the scarcity in not knowing what areas are likely to bring about any disconcerting voices may be demise to effective change management. What the study has done is to establish these concerns and to collate in a synthesis of themes reduced to less than double digits in number which CIAT can work with rather than a burgeoned set of factors, as the case is in most studies (e.g. Line et al. 2015). The three groups are unique to CIAT and therefore areas where resistance from the broad membership would be expected to originate, and during the implementation stages, these would be cited as the primary reasons where members are likely to offer the most resistance; they are, in principles, the same areas where CIAT failure to institution

change can be recorded. In light of these observations, the three areas are critical to the makeup and composition of the final conceptual model for change.

6.4 Comparative analysis of mean-ranking by architectural design experience

This section of the research will attempt to carry out a comparative analysis of Exfacirc factors to determine the extent of variation in ranks offered by CIAT membership. Similarly, as shown in Table 6.2, industry experience, Area of Architectural specialism are used to detect where the differences may lie in respondents' attitudes towards institutional change.

Erwin and Garman (2010) lamented that experience within an organisation impacts on response-performance. This is because individuals with longer service in an organisation think they have a lot to lose and readily position themselves to say more than others. The threat of not being able to find work elsewhere might be another factor for either the new recruit or the veterans themselves (if not worse among the latter). This implies that among CIAT membership, the experience must count for a lot when it comes to early identification of the areas likely to bring about the most resistance for change.

Table 6.2: Cross tabulation between Area of Architectural Specialism and Years of AT Practice

| Years of - Architectural Technology Practice (YATP) | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|------------|
| Area of Architectural Specialism-AAS | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
| Design/Architectural Services only | 21 | 16 | 30 | 2 | 4 | 73 |
| Practice Management | 2 | 4 | 13 | 0 | 2 | 21 |
| Academic | 19 | 1 | 12 | 1 | 5 | 38 |
| Surveying, Design and Refurbishment | 3 | 10 | 10 | 48 | 12 | 83 |
| Specialist (Heritage trade sub/contractor) | 0 | 2 | 11 | 5 | 8 | 26 |
| Total | 45 | 33 | 76 | 56 | 31 | 241 |
| Percentage | | | | | | |
| AAS | 0 to 4yrs | 5 to 9yrs | 10 to 14yrs | 15 to 19yrs | 20yrs+ | Total |
| Design/Architectural Services only | 8.7 | 6.6 | 12.4 | 0.8 | 1.7 | 30 |
| Practice Management | 0.8 | 1.7 | 5.4 | 0.0 | 0.8 | 9 |
| Academic | 7.9 | 0.4 | 5.0 | 0.4 | 2.1 | 16 |
| Surveying, Design and Refurbishment | 1.2 | 4.1 | 4.1 | 19.9 | 5.0 | 34 |
| Specialist (Heritage trade sub/contractor) | 0.0 | 0.8 | 4.6 | 2.1 | 3.3 | 11 |
| Total | 18.7 | 13.7 | 31.5 | 23.2 | 12.9 | 100 |

As

shown in Table 6.2, respondents can be regrouped into 3 nominal groups:

1. **Practice management practitioners:** these comprise members who own practices which provide design and architectural services (39% of the study sample)
2. **Academics:** members who train and provide the background and grassroots understanding of the role, skills and design dexterities at institutions of higher education (16% of the study sample)
3. **Contracting Practitioners:** who work for firms that execute design and refurbishment projects (e.g. design and build companies) (45% of the study sample).

Furthermore, in terms of industry experience, it can be deduced that if the sample is divided into two camps: (X and Y), it can be deduced that X comprises 154 respondents (64%) of the total sample and had between 0 up to 14yrs of industry experience. Therefore, the remaining 87 or 36% as the respondents had 15years and above of architectural design experience.

The main question is that do these variables a cause to suspect there would impact in the way respondents ranked the factors likely to offer the most resistance to change? If so, would they provide underlying reasons than those advanced anymore so far?

6.4.1 Bivariate analysis of rank order of factors resistance to change

As shown in Table 6.3 and Figure 6.2, the practitioners were split into two groups based on architectural design experience. The first group is for practitioners with up to 14 years' of architectural practice, thus labelled as (X). The other group relates to practitioners with over 15 years of experience and likewise labelled as (Y).

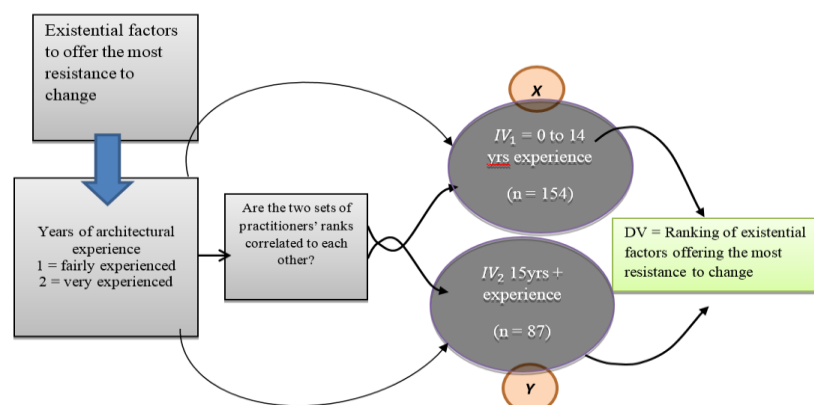


Figure 6.2: two-tail hypothesis on rank order of exfacric by years of architectural experience

Table 6.3: Comparative ranking of Exfacirc relative to years of architectural practice

| N= 241 Sample (R) | Years of Architectural Practice | | | | Difference of ranks (d) d^2 | |
|----------------------|---------------------------------|------|--------------------------|------|-------------------------------------|------|
| | X | | Y | | | |
| | <i>n</i> = 154 up to 14yrs | rank | <i>n</i> = 87 15yrs + | rank | | |
| Exfacirc1 | 4.60 | 1 | 4.79 | 1 | 0 | 0 |
| Exfacirc2 | 4.40 | 2 | 4.50 | 2 | 0 | 0 |
| Exfacirc7 | 4.36 | 3 | 4.43 | 3 | 0 | 0 |
| Exfacirc5 | 4.24 | 6 | 4.36 | 5 | 1 | 1 |
| Exfacirc4 | 4.24 | 6 | 4.25 | 7.5 | -1.5 | 2 |
| Exfacirc6 | 4.24 | 6 | 4.25 | 7.5 | -1.5 | 2.25 |
| Exfacirc8 | 4.08 | 8 | 4.32 | 6 | 2 | 4 |

$$\sum d^2 = 9.25$$

As a consequence of the foregoing observation, this analysis informed the choice of Spearman's (r_s) rank correlation coefficient test as the most appropriate measure of variance within the variable of interest (years of architectural experience) on the rank order of factors likely to offer the most resistance to change. As previously defined in chapter 5, the correlation test, as a bivariate method detects how close the respondents are in the ranking of the factors presented earlier in Table 6.1.

Thus the Spearman's rank correlation coefficient, as before defined, is represented by the formula:

$$r_s = 1 - \frac{6\sum d^2}{n(n^2-1)}$$

Thus the study set out a two-tailed test of hypothesis as follows:

Null Hypothesis:

H_0 : No association exists in ranking of existential factors resistance to change (exfacirc) between two sets of practitioners based years of architectural experience.

Alternative Hypothesis:

H_1 : Association exists in the ranking of existential factors resistance to change (exfacirc) between two sets of practitioners based years of architectural experience.

The appropriate test of hypothesis, after Howitt and Cramer (2011) is to reject the null hypothesis (H_0) set at a significance level $\alpha = .05$ where $n = 8$ and if $r_s > 0.643$ - the table value obtained from Appendix E-2, which contains the critical values of Spearman's rank correlation coefficient. Thus,

from Table 6.3, the computation of r_s unfolds as follows:

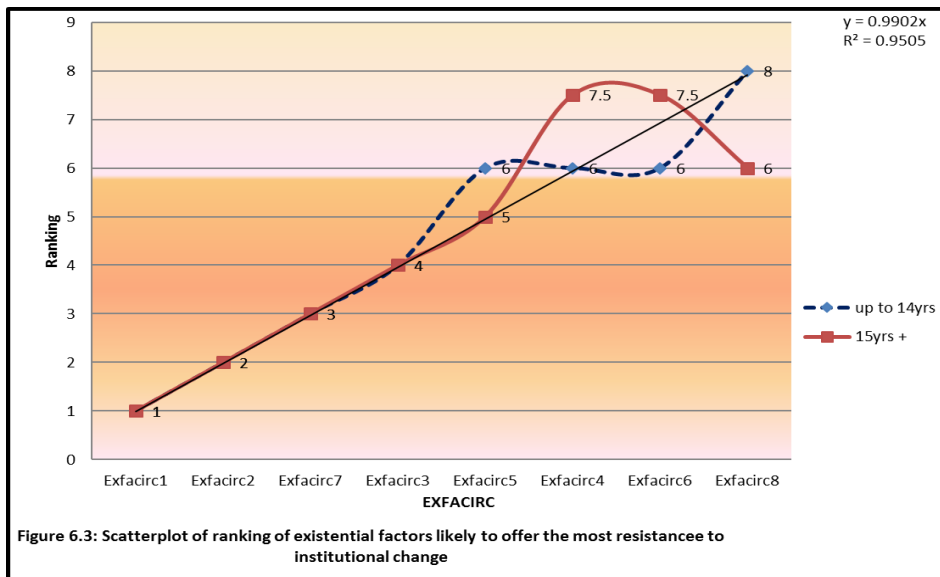
$$r_s = 1 - \frac{6(9.25)}{8(8^2 - 1)}$$

$$r_s = 1 - \frac{55.5}{504}$$

$$r_s = \mathbf{0.8898}$$

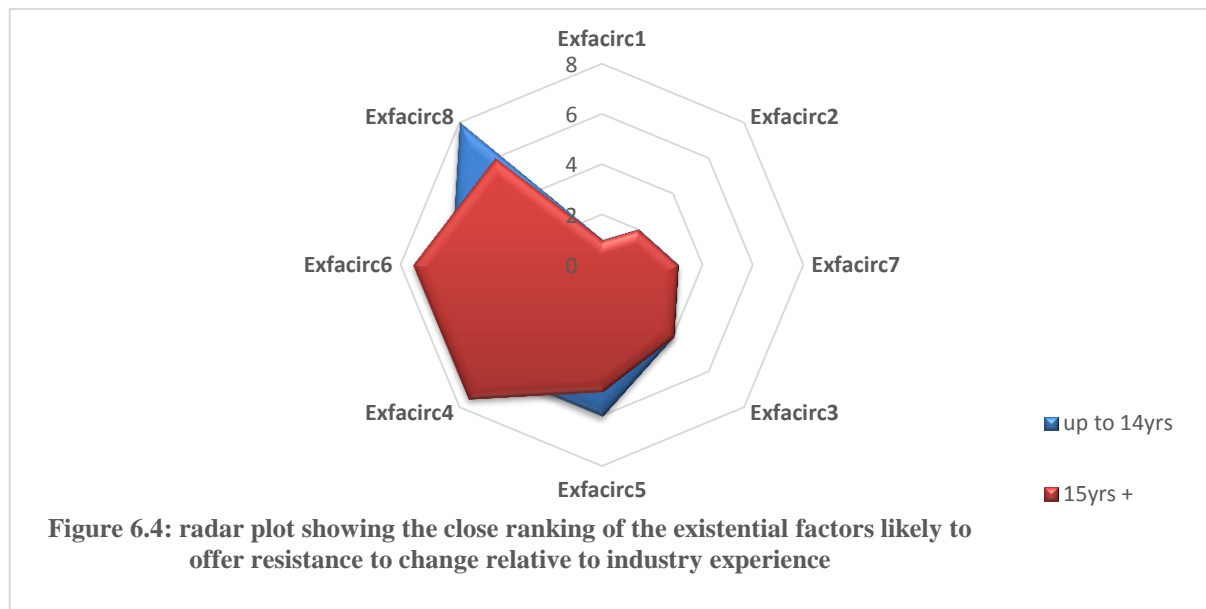
As the test statistic follows a critical Table value of the Spearman's rank correlation coefficient which is given as $r_s = 0.643$, it would appear, therefore, that the computed $r_s = \mathbf{0.8898}$ far exceeds the Table value of 0.643 as discerned from Appendix E-2. As a consequence of this result, the study proceeds to reject (H_0) in favour of the alternative (H_1) implying that a strong association exists between the two sets of practitioners relative to architectural design experience.

The outcome of the computed coefficient value is high enough even at 99% confidence level whose value is given as 0.833. Further inspection of Table 6.3 shows a very close rank order between $R(x)$ and $R(y)$ and the scatterplot in Figure 6.3 underscores and substantiate the study's conclusion. This



inference to a strong association based on experience is further corroborated in Figure 6.4 where the radar-plot graph of $R(x)$ is perfectly overcast that of $R(y)$, an indication of a robust association.

From this result, therefore, it can be concluded that both groups of respondents have similar views as to the rank order and severity of each of the eight existential factors likely to offer the most resistance to change. It is no surprise that the respondents do not have to work too long in the industry to realise the potential threat to institutional change both at a personal and Institutional level.



The implication of this outcome is that experience on its own is not sufficient to explain for the differences in which the two sets of practitioners ought to perceive the impact of the factors likely to offer the most resistance to change. This is not a surprise since, at the inception of any CIAT executive team, one of the challenges faced by CIAT is to undertake a broad orientation exercise which helps to identify the perception of the board members on the current status of the CIAT. Given the importance and scope attached to more widespread consultation and participation of the membership, it is a relief to realise the least CIAT can do is to reach out to its membership. Figure 6.5 shows the two-stage approach to managing change and is a development of the model given earlier in Figure 6.1. It has added features demonstrate the 3 phases of resistance to change and their manifestation. Above it is stage two, which is the preparation stage. This half of the model presents a conceptual position where the decision-makers or CIAT executive would need to introduce techniques or countermeasures to negate the factors anticipated as giving the most resistance to

change. It encourages managing emotions and also reinforces the resulting resistance by reassuring the membership why change might be inevitable and more importantly, how it benefits the individuals.

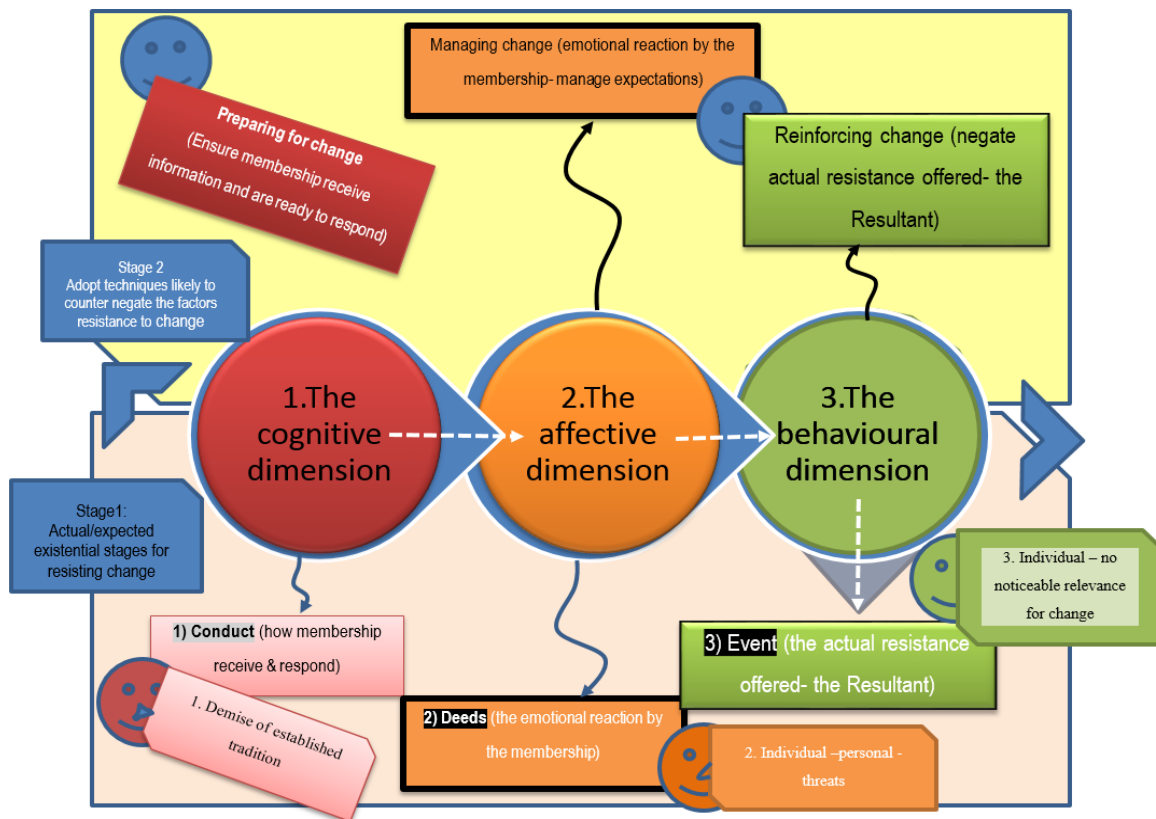


Figure 6.5: Three existential phases of resistance to change incorporating study's observations

6.5 Summary

The study has explored the factors that likely to offer the most resistance to change. The 241 practitioners were split based on years of practising architectural experience. This was done to determine the effect of experience on perception and ranking of factors believed to offer the most resistance to institutional change. The study surmised that experience does not explain the perception of those factors likely to offer resistance and respondents ranked the factors that might impinge on the success of institutional change it was difficult to split them based on industry experience alone.

At the aggregate level, three definitional factors were generated to represent all the eight factors seen

to offer the most resistance. Figure 6.5 surmises these, using a shadow cast of the phases. The first stage must involve mitigating ongoing concerns that any change would destroy the very traditions for which CIAT has come to be known. This fear is driven by those who believe the history and reputation might be undermined if the change is allowed to take place for the sake of it. The second threat to change is associated with perceived threats but at an individual level. The members who have held the membership of CIAT the longest might not see the benefits to be accrued from change, and this can generate a level of apprehensiveness. In anticipation, CIAT executive should show concern for these individuals by introducing initiatives that anticipate and address in advance the associated concerns.

The third area is that given that membership would need to be fully consulted. The lack of information might generate further anxiety and therefore, more resistance to change. The countermodel presented in Figure 6.5 offers solutions and what measures the study perceives to be useful and likely to nullify the sources and areas highlighted as potential threats likely to offer the most resistance to change.

7.0 Priority areas for Institutional Change - Priareic

7.1 Introduction

The chapter builds on the previous chapter, which examined the existential factors likely to present the most resistance to institutional change. Given the outline of these factors, it is logical for this section of the study to identify what the membership identifies as areas where the executive of CIAT should direct their attention. In examining the factors which were reshaped after the pilot stages, and subsequently presented to the membership, the study hopes to draw on the views of the members to identify the cardinal areas that considered critical by the membership. It is expected that having an understanding of the priority areas will bring to the fore, areas where CIAT is not so good but also identify further the value-desirability strategies critical to the conceptual framework for institutional change. In generating this information, the focus can then be directed to establishing the areas which offer the most opportunities for inspiring, attracting membership to the CIAT and that when they come through the door, they are likely to retain their membership for life.

7.2 Identifying the priority areas for Institutional change

The study has so far examined the driver-factors to institutional change (chapter 4) and went further to establish the value-desirability factors (chapter 5) and subsequently, the characteristics of areas likely to offer the most resistance to institution change (chapter 6). Within the remits of the change management, uncertainty can only be reduced if the study can establish which areas the broad membership rank as critical to the survival and viability of their professional body. Table 7.1 presents twelve areas which were presented to the membership for ranking in order of importance by using a scale of 0 to 5 where 5 = extremely important, 4 = very important, 3 = important, 2 = undecided, 1 = unimportant and 0= not at all important

The factors in the top half of the table presents; those areas that are critical and those towards the bottom of the table are the less critical areas. Nonetheless, it has to be stated that given that the study initially identified more than 25 factors, any one of the twelve as important as the rests, except course that it is also essential to know which areas are perceived to be critical than others.

Table 7.1: Priority areas for institutional change- Priareic

| Description of priority areas for institutional change | | mean score | Rank | Implied meaning |
|--|--|------------|------|---|
| Priareic10 | Ensure CIAT provides the 21st century dexterities impressed on a modern Architectural Technologist | 4.960 | 1 | Value-desirability |
| Priareic3 | Focus on establishing design related software by forming alliances with software manufacturers | 4.396 | 2.5 | <i>(Inspire)</i> |
| Priareic7 | Increase and sustain the international profile of CIAT | 4.396 | 2.5 | Exogeneity : International |
| Priareic1 | Increase the reputation of CIAT as a professional body | 4.340 | 4 | <i>reputation of CIAT</i> |
| Priareic5 | Broaden the appeal for CIAT across other professional bodies | 4.280 | 5 | <i>(Attract)</i> |
| Priareic11 | Widen strategies to combat the ever increasing age gap in CIAT | 4.210 | 6 | |
| Priareic6 | Open professional route via apprenticeships to attract new entrants into CIAT | 4.180 | 7 | Endogeneity : widen |
| Priareic8 | Align membership assessment to accommodate members from other professional bodies | 4.010 | 8 | <i>membership</i> |
| Priareic2 | Widen and reach out for more integration with RIBA and beyond with other professional bodies. | 4.000 | 9 | <i>(Model)</i> |
| Priareic12 | Consider revising the progression requirements | 3.960 | 10 | Ambidextrous : Simplify |
| Priareic9 | Reduce deferrals for membership progression through mentorship by recently successful candidates | 3.850 | 11 | <i>progression to designated levels</i> |
| Priareic4 | Ensure mentors are available at every referral point in the assessment structure | 3.670 | 12 | <i>(Retain)</i> |

As noted in Table 7.1, the first areas of focus have to be:

1. Value desirability (Inspirational) factors

- **Priareic10:** Ensure CIAT provides the 21st-century dexterities impressed on a modern Architectural Technologist
- **Priareic3:** Focus on establishing design related software by forming alliances with software manufacturers

The membership seeks value if they feel they develop further AT design dexterities which align them with the day-to-day activities and roles of an Architectural Technologists. The desirability for membership is undoubtedly associated with the access to design software produced by leading software designers which they value a lot. These are summed up as initiatives launched by the professional body capable of creating the impulse to aspire to become the best design outfits. They represent a cluster of initiatives likely to *inspire outsiders-in*.

2. Exogeneity factors: International reputation of CIAT

- **Priareic7:** Increase and sustain the international profile of CIAT
- **Priareic1:** Increase the reputation of CIAT as a professional body
- **Priareic5:** Broaden the appeal for CIAT across other professional bodies

These factors represent the desire by the membership for CIAT to focus on improving the reputation of the professional and to enhance its representation by offering similar designations as other professional bodies. In doing so, it is instructive for CIAT to mirror its services to match if not provide better incentives to its members. These factors are, therefore seen to represent the external profile the institution should possess as shaped by other professional organisations. It is these same factors when viewed from the outside that help shape the reputation of the CIAT. These must be identified as they help to *attract-outsiders in* (attract potential membership)

3. Endogeneity factors (widen membership)

- **Priareic11:** Widen strategies to combat the ever-increasing age gap in CIAT
- **Priareic6:** Open professional route via apprenticeships to attract new entrants into CIAT
- **Priareic8:** Align membership assessment to accommodate members from other professional bodies
- **Priareic2:** Widen and reach out for more integration with RIBA and beyond with other professional bodies.

These factors are an accumulation of what the membership describe as in-house issues. They relate to the innards of the professional body and what it needs to be doing to ensure effective change, hence the reference to endogeneity areas of focus. These are the factors that nourish the day to day functions of the CIAT and therefore initiatives that should be put in place to help nature members who are starting at the lowest designations of membership such as students (associates). The cluster implores the need to *model early career entrants* and to *mould* them to dexterities considered acceptable for a professional and chartered CIAT membership.

4. Ambidextrous

- **Priareic12:** Consider revising the progression requirements
- **Priareic9:** Reduce deferrals for membership progression through mentorship by recently successful candidates
- **Priareic4:** Ensure mentors are available at every referral point in the assessment structure

While the professional body must function as a business, looking at all avenues of raising capital, it is certainly the case that one side of the business should focus on ensuring the institute is able to function financially by ensuring there is a robust mentorship program in place. This programme is

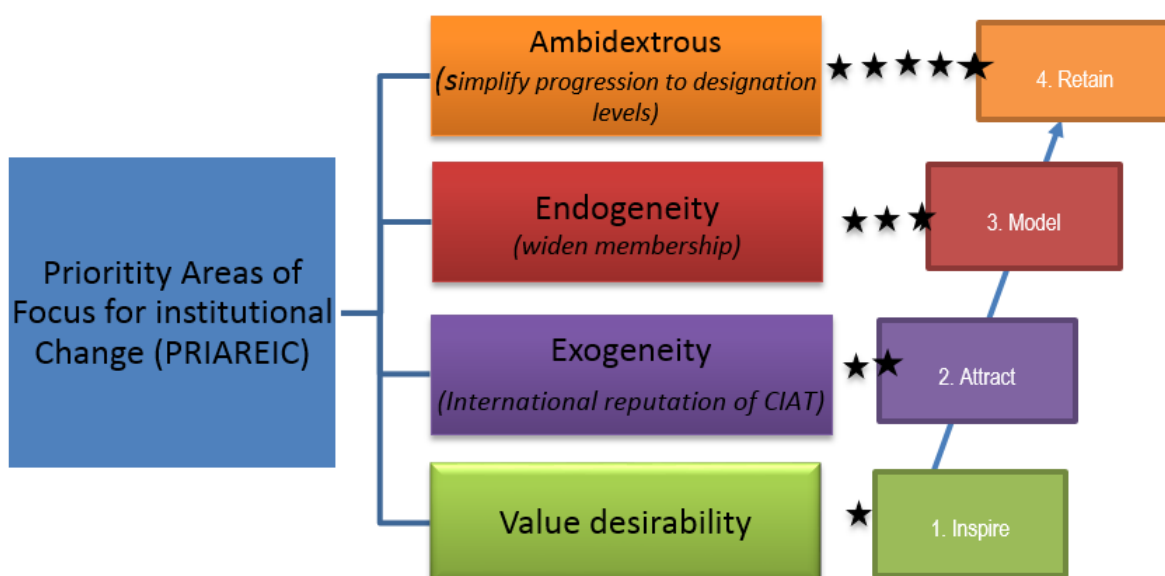


Figure 7.1: Four key areas of focus to inform the phase-change for institutional change management

meant to reduce attrition and thus encourage growth in numbers rather than the opposite. As a cluster of factors, they represent two sides to a CIAT's coin: one is that the institution should sustain its business model and the other is that it should sustain the quality of assessment, as well as the integrity of a process that reflects what it means to be a member of CIAT: high standards of design profiling by members who will do all they can to ensure that the traditions of CIAT are fully registered and preserved. This cluster was thus named as the ***ambidextrous cluster*** predominated by the insatiable desire by the membership to seek the simplification of the progression route to various designations within CIAT. It is a cluster which represents on one hand principles of desire ***to keep and retain*** the members who have mature through different designations of CIAT membership structure. The four phase-change is demonstrated in Figure 7.2 clearly shows the linear relationship between the factors and why these stages are critical mass to the success of any change management.

Having established the Priority areas of focus for institutional change, it is now critical to at least compare how the sample fared in the rating of the 12 factors. This will allow the study to have an understanding of the extent of variance among the respondents and what definitions can be apportioned to those observed areas of variance.

7.3 Evaluation of rank order of Priareic relative to Areas of Architectural Specialism This section aims to examine the ranking order of the factors to develop an understanding of the observations made by industry practitioners by how they ranked the level of priority as identified by the 12 factors whose rank order was identified and presented in Table 7.1. This part of the analysis, therefore, compares by using a multivariate non-parametric approach to understanding the strengths of the agreement as to the areas with the most critical mass when contemplating areas of focus during institutional change management. The objective is to establish whether there are any notable variations in the rank order of Priareic factors relative to designated areas of Architectural Specialism.

7.3.1 Comparison of variance in ranking of Priareic factors

As before described under Kruskal-Wallis, this section will explore the extent of agreement among CIAT membership based on the ranking the gave to the 12 identified items of **Priareic**. This section, therefore, attempts to further examine the variance in the rank order of Priareic by evaluating more than two groups of data values. This procedure is hoped to be achieved by using the Kruskal-Wallis test. The procedure enables the researcher to establish and gain further insight into the closeness or distinctness of the research participants' ranking of Priareic based on the Areas of Architectural Specialisms as indicated by respondents to the structured questionnaire instrument, namely:

- Practice/design management firms ($n = 94$);
- Academic/researchers ($n = 38$);
- Surveying/refurb & heritage design specialists ($n = 109$).

As there are more than two groups to compare, the analysis of variance adopted was the Kruskal-

Table 7.2: Pooled factors Priority Areas for Institutional change

| Pooled variables | Factors | Mean value | Area of Architectural Specialism-AAS |
|------------------|------------|------------|--|
| 1 | Priareic10 | 4.57 | Practice Design management firms |
| 2 | Priareic3 | 4.86 | |
| 3 | Priareic7 | 4.43 | |
| 4 | Priareic1 | 4.57 | |
| 5 | Priareic5 | 4.43 | |
| 6 | Priareic11 | 4.43 | |
| 7 | Priareic6 | 4.43 | |
| 8 | Priareic8 | 4.57 | |
| 9 | Priareic2 | 4.43 | |
| 10 | Priareic12 | 4.29 | |
| 11 | Priareic9 | 4.00 | |
| 12 | Priareic4 | 2.86 | |
| 13 | Priareic10 | 4.20 | Academic/Researchers |
| 14 | Priareic3 | 4.60 | |
| 15 | Priareic7 | 4.20 | |
| 16 | Priareic1 | 4.40 | |
| 17 | Priareic5 | 4.00 | |
| 18 | Priareic11 | 4.60 | |
| 19 | Priareic6 | 4.20 | |
| 20 | Priareic8 | 4.00 | |
| 21 | Priareic2 | 4.40 | |
| 22 | Priareic12 | 3.60 | |
| 23 | Priareic9 | 3.80 | |
| 24 | Priareic4 | 3.00 | |
| 49 | VaDIc5 | 4.33 | Specialist Heritage/ design/trade sub/contractor) |
| 50 | VaDIc1 | 3.89 | |
| 51 | VaDIc3 | 4.00 | |
| 52 | VaDIc4 | 4.22 | |
| 53 | VaDIc10 | 4.33 | |
| 54 | VaDIc2 | 4.11 | |
| 55 | VaDIc6 | 4.00 | |
| 56 | VaDIc9 | 4.00 | |
| 57 | VaDIc12 | 3.73 | |
| 58 | VaDIc11 | 3.67 | |
| 59 | VaDIc7 | 3.78 | |
| 60 | VaDIc8 | 3.23 | |

Wallis test is, which as earlier stated, is an ideal and relevant technique in a multinomial situation. Therefore the mean values of the Priareic factors of each K values are pooled and arranged accordingly, assigning ranks to the values as shown in Table 7.2 and 7.3 respectively.

Looking to ensure the KW statistic follows a chi-square distribution with $k - 1$ df, the study should reject the H_0 if KW is $> \chi^2_{\alpha, df}$ the critical value of chi-square curve $\alpha = 0.05$ $n = 12$ and 2 degrees of freedom.

Table 7.3. Priority Areas for Institutional change

| | <i>Mean score</i> | <i>Alloted Pooled Rank</i> |
|----|-------------------|--------------------------------|
| 1 | 4.83 | 1 |
| 2 | 4.46 | 2 |
| 4 | 4.33 | 4 |
| 5 | 4.33 | 4 |
| 6 | 4.32 | 6 |
| 7 | 4.24 | 7 |
| 8 | 4.23 | 8 |
| 9 | 4.20 | 9 |
| 10 | 4.19 | 10 |
| 11 | 4.17 | 11 |
| 12 | 4.10 | 12 |
| 13 | 4.08 | 13 |
| 14 | 4.05 | 14 |
| 15 | 4.00 | 16 |
| 16 | 4.00 | 16 |
| 17 | 4.00 | 16 |
| 18 | 3.90 | 18.5 |
| 19 | 3.90 | 18.5 |
| 20 | 3.89 | 20 |
| 21 | 3.83 | 21 |
| 22 | 3.67 | 22.5 |
| 23 | 3.67 | 22.5 |
| 24 | 3.60 | 24 |
| 25 | 3.50 | 25 |
| 26 | 3.40 | 26.5 |
| 27 | 3.40 | 26.5 |
| 28 | 3.30 | 29 |
| 29 | 3.30 | 29 |
| 30 | 3.30 | 29 |
| 31 | 3.27 | 31 |
| 32 | 3.16 | 32 |
| 33 | 3.10 | 33.5 |
| 34 | 3.10 | 33.5 |
| 35 | 3.03 | 35 |
| 36 | 2.97 | 36 |

Null Hypothesis:

H_0 The K architectural practitioners have identical ranks on Priareic;

Alternative Hypothesis:

H_1 At least two of the K architectural practitioners differ in their ranks of Priareic.

From Table 7.4, the different groups are presented showing the respective mean values within each designation of architectural specialism. The allotted ranking of factors presented in Table 7.4 determines the rank order of the factors areas considered to be more of priorities for change bunched

Table 7.4: Priority Areas for Institutional change

| | | | Area of Architectural Specialism -AAS | | | | | |
|------------|--------------|----|---------------------------------------|------------------|------------------------|------------------|--|------------------|
| | | | IV1 | | IV2 | | IV3 | |
| | | | Practice/design management firms* | | Academics/ Researchers | | Surveying/refurb & Heritage design specialists | |
| | Mean N = 241 | | <i>n</i> = 94 | <i>P(R)score</i> | <i>n</i> = 38 | <i>P(R)score</i> | <i>n</i> = 109 | <i>P(R)score</i> |
| Priareic10 | 4.960 | 1 | 4.83 | 1 | 4.00 | 16 | 4.46 | 2 |
| Priareic3 | 4.396 | 2 | 4.33 | 4 | 4.10 | 12 | 4.32 | 6 |
| Priareic7 | 4.396 | 3 | 4.17 | 11 | 3.90 | 18.5 | 4.24 | 7 |
| Priareic1 | 4.340 | 4 | 4.20 | 9 | 3.90 | 18.5 | 4.19 | 10 |
| Priareic5 | 4.280 | 5 | 4.33 | 4 | 3.40 | 26.5 | 4.23 | 8 |
| Priareic11 | 4.210 | 6 | 4.33 | 4 | 3.40 | 26.5 | 4.08 | 13 |
| Priareic6 | 4.180 | 7 | 4.00 | 16 | 3.60 | 24 | 4.05 | 14 |
| Priareic8 | 4.010 | 8 | 4.00 | 16 | 3.30 | 29 | 3.89 | 20 |
| Priareic2 | 4.000 | 9 | 3.67 | 22.5 | 3.30 | 29 | 3.27 | 31 |
| Priareic12 | 3.960 | 10 | 3.50 | 25 | 3.10 | 33.5 | 3.16 | 32 |
| Priareic9 | 3.850 | 11 | 3.67 | 22.5 | 3.30 | 29 | 3.03 | 35 |
| Priareic4 | 3.670 | 12 | 3.83 | 21 | 3.10 | 33.5 | 2.97 | 36 |
| | | | <i>T1</i> = 156 | | <i>T2</i> = 296 | | <i>T3</i> = 214 | |

up at the top. Using Table 7.3 the pooled ranks are then represented in Table 7.4 for the computation of KW.

Therefore from Table 7.4, the Kruskal-Wallis test given is derived from the formula:

$$KW = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{T_i^2}{n_i} - 3(n+1)$$

From Table 7.4, the different groups are presented showing the respective mean values within each Architectural specialism. The allotted ranking of factors presented in Table 7.4 determines the rank order of the factors considered as the more important and thus more of priorities.

Similarly, T_1 = the total of the ranks from the 'i' sample and the values of T_1 , T_2 , and T_3 taken from Table 7.4 the Table value for Chi-square as given in Appendix; the study should reject H_0 at 2 degrees of freedom should $KW > \chi_{0.5,2}^2 = 5.99$.

$$\frac{12}{n(n+1)} \left[\frac{156^2}{12} + \frac{296^2}{12} + \frac{214^2}{12} \right] - 3(n+1)$$

$$\frac{12}{36(37)} \left[\frac{180^2}{12} + \frac{246^2}{12} + \frac{135.5^2}{12} \right] - 3(37)$$

Hence, **$KW = 7.430$**

The computed value of 7.43 exceeds the chi-square Table value of 5.99 at $\alpha = 0.05$ and 2 degrees of freedom. Thus given the computed KW value is higher than the Chi-square table, the study proceeds to reject the Null hypothesis and concludes that there is sufficient evidence to project differences in the perception of factors which give variation in the ranking of priority areas of focus among the study practitioners. In other words, there are differences in the ranks provided by the three groups of practitioners. Indeed a further inspection of Table 7.4 shows that the sums of the ranks across the three groups are distinct i.e. $T_1 = 156$; ($T_3 = 214$; $T_2 = 296$)

This result implies that the Architectural –specialism (for example, Principal contractors Sub-contractor or a Specialist heritage contractor), is more congruent with academics than those that run their own companies.

7.4 Summary and conclusion

The chapter identified the level of priorities with the phase changes that inform the priority areas to focus on and which inform the success of the change expected. To achieve this, 12 factors were identified from the initial desk study and presented to practitioners in order to provide a rank order of the 12 factors. In this section of the study, four key areas that generated the most focus have been identified, namely:

- Value desirability: *inspire*;
- Exogeneity: *maintaining an international reputation*;
- Endogeneity: *Widening membership and*
- Ambidextrous: *Simplifying progression routes for designated levels of membership*

Consequently, the importance of each implied meaning or designated terms was discussed. From the twelve rankings of priority areas, the four areas were summed up by four key initiative –drivers, namely:

1. Inspire new entrants
2. Attract the members from a global audience

3. Model them to become life members and
4. Once registered to incentivize them to retain their membership loyalty for life.

These are the four pillars to the Phase change, and the executive of CIAT should introduce drivers for change cast around the four-phase change principles.

8.0 Conceptual Framework

8.1 Introduction

This chapter aims to integrate the findings of the research by formulating the conceptual framework for institutional change management.

Throughout the presentation of the findings, reference has been made to several models about change management. It is therefore critical to this study that the model presented fulfils those models that exist so far but also emphasise that the model has been ambitious in its outline by highlighting the importance of ensuring the recommendations by ICAEW and CECCAR (2012) which looked closely at the role and structure of professional bodies examining the then-current and what is considered as the ‘future’ challenges that all professional bodies were likely to be experiencing. This round table discussion which invited institutions from within Europe, Asia, America and the rest of the world identified a common theme that has been embraced by this study. This theme was that professional bodies could not continue with the ‘business as usual attitude’ and neither can they survive merely wearing a charity hat all the time. As organisations that rely on the membership for subscription capital, the members will continually demand the best.

At the back of the above concerns came the realisation that institutions have to be ambidextrous: on hand to continue to be of service to the members and society at large, but also ensure the changing needs of the membership are met. The latter is a difficult one as it requires meeting the financial costs of providing services which originate from firms that also invest enormous capital in generating their technologies. In light of this, it is not expected that these capital-oriented organisations have to continue to offer professional bodies discount after negotiated discounts.

It would appear that there is no widely used, understood and accepted conceptual framework or formal approach to institutional change relating to professional bodies. This being the case, the study avoided the temptation of trying to prescribe a framework that would work for every

professional body as such a framework would need extensive consultation and bringing all organisations to a round table for them to agree on the go-ahead. There is also a significant amount of evidence, especially at the back of the ICAEW and CECCAR (2012) report that most professional bodies are trying to compete for the same individuals who are also affiliated to other professional organisations; in other words, the nest is wide enough, and the cast is slowing down. Many members are finding employers who are not so keen on professional body subscriptions and therefore will not necessarily reward their employees on the back of retaining a chartered membership with one or two organisations. With this being the case, it appears that professional bodies have a lot to appeal for and that their work is cut out if they are to attract new entrants, let alone hold on to those already under their books.

8.2 Summary of research findings

The study set out an overarching aim which is: to develop a conceptual framework for managing institutional change for the Chartered Institute of Architectural Technologists - CIAT.

To this end, the research went on to identify the following:

‘Among the broader membership, are there notable variations in the drivers, values and desirability factors derived from institutional change management?’

The study set out the above research question to act as a yardstick for further probing and interrogation of the data targeted to provide answers to some sub research question, namely:

- Are the perceived factors driving institutional change the same among the designated membership?
- What is the perceived value and desirability for institutional change and whether this was the same among the designated membership?
- Was the evidence of unanimity among the membership as to the priority areas for institutional change?

With these questions in mind, the study set objectives to:

1. critically analyse how the membership compare in the ranking of factors driving institutional change - FaDic;

2. evaluate and ascertain the extent of the agreement as to the value and desirability derived from institutional change by the broad membership of CIAT -VaDic
3. explore and document existential factors contributory to increased resistance to institutional change - Exfacirc;
 - quantify and ascertain priorities for institutional change management (**Priareic**)
 - develop and validate a conceptual framework for managing and delivering Institutional change for CIAT.

Having set these objectives and questions, the research came-up with three research hypothesis, namely:

4. The perception of the factors driving institutional change is the same among the designated membership;
5. The perceived value and desirability derived from institutional change is the same among the designated membership
6. There is unanimity among designated membership about the priorities for institutional change.

All the above four objectives were addressed in different chapters of this research. For example, objective one was addressed in chapter four, and an analysis of the key factors driving institutional change was made. The interpretations of these factors are presented together with a discussion made to closely reflect the relevant theories and literature associated with change management theories.

The key finding in chapter four, considered a key contribution of the study, were *endogeneity, exogeneity and ambidextrous factors*.

The study concluded that endogenous factors define issues whose value and influence is a derivative of the decisions taken within an institution, in this case, CIAT. The main example of one such endogenous factor was the clarion call for *CIAT to review routes to chartered membership* asking for more flexibility in the conditions imposed on members. The study also referred to these as factors inherently internal to the organisation and therefore factors that bring value whose effect is

sometimes imposed by defined changes outside of the organisation. It matters therefore that an organisation, undertaking change is aware of the outside commercial factors because internal changes, though internally driven, are often a response to what is happening outside of the organisation.

The study also found exogenous drivers who value are largely influenced by forces external to an organisation. These factors do sometimes force the organisation to react. In relation to membership, an example of an exogenous factor was that the CIAT is unable to keep its members within the nest; only 12% of all the members had their membership for longer than 15 years. This means 88% of the member left very early and this is because the bulk of the industry does not impose a demand on workers to retain CIAT membership to earn their living or progress in their career. The Institution should do more to attract enough of the most economically active membership (between the ages of 30 to 45 years both as current and future members. This factor is external to CIAT but the institution could revise its membership conditions to ensure it makes itself more relevant and able to appeal to the wider age range of membership.

Ambidextrous dimension is a demand for CIAT to maintain its tradition but more importantly, it needs to diversify the design management and design-practice tools to SMEs and technical specifications/toolkits operate as a commercial entity. Majority of the 30 to 45 years economically active members want access to these services; CIAT must see these as eggs likely to dignify its nests.

The second objective was addressed in chapter five. The focus of the chapter was to give substantial attention to address the perceived value and desirability derived from the institutional change as deduced by the broad membership of CIAT. The study further defined 'value' as, fundamentally, a recurring question of '*desirability*' in that whatever one desires, the driver is also in what an individual attaches as perceived value. Given this, the study managed to develop 12 value-desirability factors condensed into four important themes, emerged, namely:

1. Perceived professional relevance of CIAT: the designation and standing of CIAT in society

2. Investment in the diversification of technical services: as in chapter 4, these ought to be the fibres with which to CIAT should build nests for its membership.
3. Keeping an eye on the existential factors (cases for resistance especially if CIAT adopts a business-like model in the provision of its services)
4. Meet the changing needs of the membership society and the market

Chapter six introduced the areas likely to give the most cause to resist change. It was critical to the study to know what these areas are and therefore, the extent to which they can inform the institutional change management model. The study identified 8 factors which it later reduced to three key dimensions, namely:

1. *Cognitive-conduct-dimension*: this refers to how the members receive and respond to change, including ensuing benefits and how they think they will perform in such new roles. This was deduced to imply a sign of resistance driven by the fear that CIAT may lose its well-established tradition as an institution.
2. *The affective-deed-dimension* is the emotional or psychological reaction of the membership and how they receive the impending possibility of change. CIAT has to be mindful in its approach that it does not underestimate the feeling underscored by the old saying that 'if it ain't broken, then why bother fixing it'?
3. *Behavioural-event-dimension* is the resultant of the first two dimensions; it refers to the actual resistance offered by the membership to change. The study concludes that in order to undergo effective change, knowledge of what restraint areas are is critical to ensuring that the measures put in place are responsive to such concerns. The term *prophylactic* was developed in this study, likewise to imply the need for incentives that give a healing response to those likely to offer resistance to change. E.g widen access to design tool/software to SMEs as an offshoot of change management would receive less hostility.

Chapter seven considered the opinions of the membership in relation to the priority areas for change management for CIAT. Similarly, three core areas of focus that tie in with the above finding emerged, namely:

value-desirability initiatives to change: at the heart of this is the need to inspire! by widening access to measures such as design tools and Software to SMEs - the most economical bracket for CIAT

Exogeneity initiatives to change: increased demand to make the institution attractive to the outside should be embodied in measures that improve the international reputation and appeal of the organisation

Endogeneity initiatives to change: The need to attract new members which go beyond the traditional route to CIAT membership means that CIAT has to model itself in a way that other professionals loyal to their professionals can look to CIAT as a necessary ‘add-on’ to their own. This issue brings the issue of affordability into account, and an issue internal to CIAT to have to resolve as part of the change management process.

Ambidextrous initiatives: While all the above measures should be nested – or placed congruent to each other, the pinnacle to this is if the professional body institution is able to find a zenith point to retain its traditional approach but also be readily willing to ensure it can adapt to changes. The latter is a requirement for an institution to listen to the demands of its members as well as the expectations of the wider society. The study recommends a dichotomy approach to change management and the relevance of this is explained in the following sections.

8.3 An ambidextrous conceptual framework for institutional change

Judd, O’Rourke and Grant (2018) undertook an employee Surveys on how to measure employee engagement. Writing in the *Harvard Business Review*, they depict a scenario where they suggest that listening to core membership and the customers is the best weapon any company can use to improve its usefulness. It emerged that organisations not only have to serve its core customers, but it also has to reward them the best return package for their loyalty. This two-way relationship is much more relevant in today’s business setting that losing sight of what the general membership needs are enough to destroy the roots of any organisation.

As institutional change has been massively associated with premonitions of uncertainty, it is critical to any change management model that from the onset canvassing the opinions of the membership and the customers is taken as an important milestone.

Figure 8.1 shows that the model starts by looking at the CIAT as setting itself up as an ambidextrous organisation. Piderit, (2000) writing on ‘rethinking resistance and recognising ambivalence’ defined

ambidexterity as a means meeting the needs of the membership but also operating as a business entity. This is driven by the fact that as a professional body, the membership is increasingly seeking continuous improvement in the services available to them. The next phases are the usual phases of management change as reflected in Lewin 1947 change management model: Unfreeze, change and then freeze.

These stages introduce the logical sequence in which change management is to take place and at the heart of it further places the responsibility in the hands of those managing the change to ensure a full consultation phase is in place.

- 1. The first stage is the recognising the priorities for change:** this requires that the leadership is fully prepared to manage the process and any concerns no unnecessary concerns are generated as

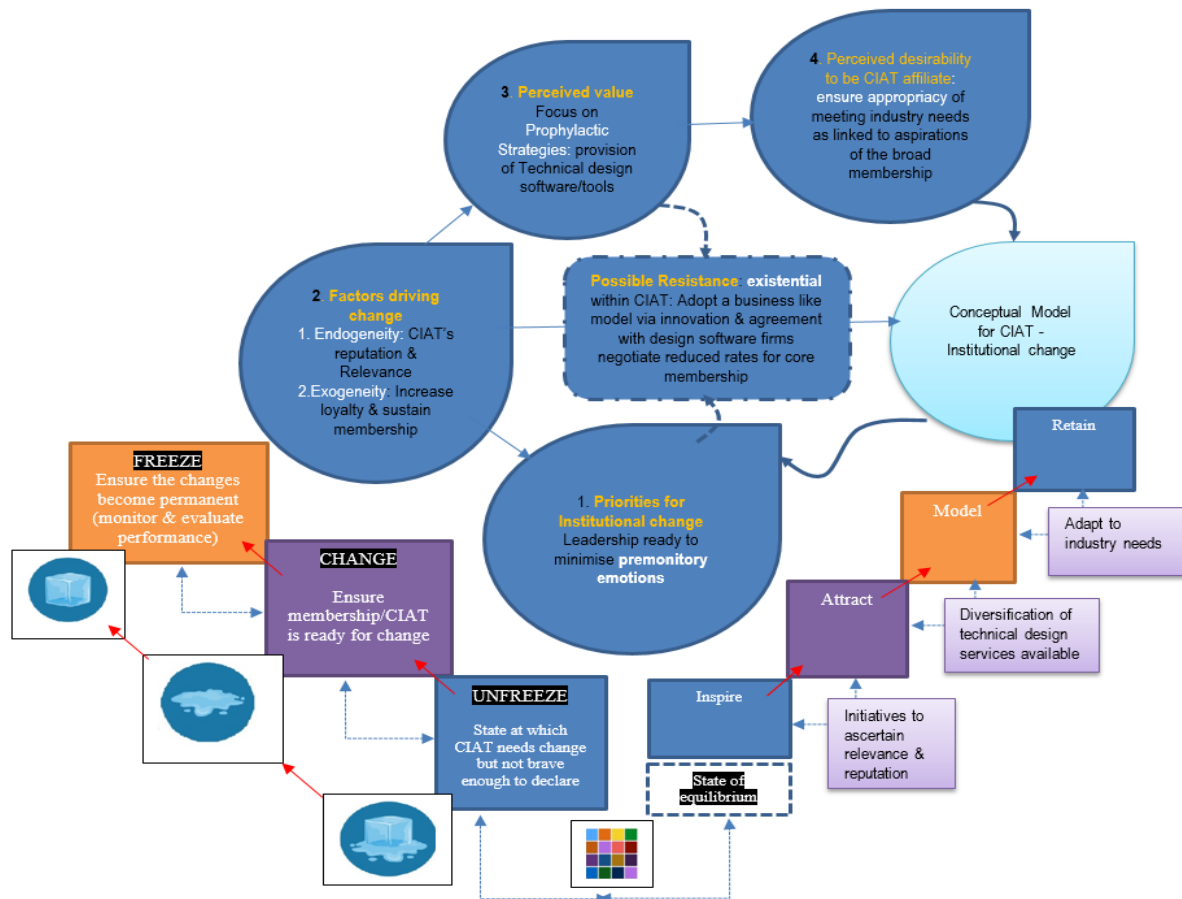


Figure 8.1: CIAT as an ambidextrous structured Institution

a result of the announcing the intention for the strategic aspect of organisational change.

- 2. Factors driving change:** this Phase looks at both exogeneity as well as endogeneity factors. These are factors responsible for improving the organisation's reputation and how it is received

from the outside and also dealing with issues that only concern the internal innards of the organisation, respectively. These phases come from the wide research undertaken by the likes of Kitapci and Celik (2013) Waldersee and Griffiths (2004) who insist that it is important for any top management team to establish what has gone wrong in other companies that have attempted to go down the path of instituting change management.

3. / 4 The next stages are the combined, perceived value-desirability factors: these were addressed in chapter 6 and are a reminder of the need to understand what the membership really value as part of their membership to CIAT. Three issues raised by the membership related to:

- i. **Demise of established tradition:**
- ii. **Individual (personal) Threats:**
- iii. **No noticeable relevance for change:**

These issues endorse the concerns raised earlier about the need to address any suspicion that those directly affected by the change are likely to go into premonition and focus on the negative aspects of the impending change.

Perceived desirability also implored the need to consider the status play of industry. Answering questions like, what do the members want the most out of their membership was seen as a critical point of addressing by and large, the issue of the relevance of the professional body.

5. Existential factors offering resistance to change.

Figure 8.1 also shows that against this background is the need to have cognisance of the fact there is bound to be counter opposing views to any proposition for change. Indeed as part of this study, a process member finding was initiated using the Future Group – FG - forum acted as a pretest for the viability of the model. The FG comprised of 30 members and these confirmed that if the recommendations from the study were taken through, they would revolutionise the institutions. The ambidextrous concept and the widening of membership to other professional bodies as well as increasing software access to SMES's received the most attention.

This retesting of the framework was critical to the whole process of change to be aware and to

accommodate disconcerting voices. In any organisation, the free flow of information, opinions and freedom also involves accommodating those who disagree with management. Central to the flow model is the very reminder of the relevance of this issue. Any project success is directly proportional to the implementation of the steps in the process. The process member findings

8.4 The application of a conceptual model for institutional change.

Phase one: Unfreeze Phase

1. **Establish a clear state of the present needs of CIAT: this stage is a requirement** for the executive to set up consultative meetings to obviate any concerns that the member has not been consulted.
2. **Define existential areas of concerns and likely to create more uncertainties:** following the previous level of establishing clearly set out goals for change, it is also essential to be mindful of the psychological impact that any prospects for change bring.
3. **Is there uncertainty of what is to be expected with the change:** these premonitions are known to be associated with every proposal for organisational change. This presents a dichotomy response: a NO response would allow the decision-maker to advance to the next level. However, a 'YES', response prompts the decision-maker to link back to the general flow of the conceptual framework but at a stage when the need to consult the membership becomes critical.
4. **Ensure the priorities for change are identified:** It is important to allow the membership to be looped into the change management process by incorporating areas where the membership place the most value of return for admission to CIAT. It is within the scope of the executive to have cognisance of the exactness of the wish-list of its membership. Identifying the priorities completes the whole change management process in respect of the 'value-desirability' as attested in the various designations to which CIAT intends to attract its most economically active individuals and SMEs. Therefore what is valued by the membership should be reflected in the measures or initiatives that the institution decides to

institute forward. In this instance, to ‘institute’ is to put together a set of principles that define CIAT as the representative body for Architectural Technologist. For these reasons, CIAT must identify the members' priorities. For example, by ensuring that SMEs have access to software design/tool packages satisfies the ‘value’ and ‘desirability’ aspects both of which are enshrined in the strong feelings membership have for their professional body. Understanding priority areas for change, therefore, delivers benefits in both directions: on one hand, CIAT is rewarded with the long term loyalty of fully paid membership and in the other, SMEs have guaranteed access to services that ensure they can weather the economic turbulence and remain afloat and competitive.

5. **Are areas likely to be unpopular to the membership known?** Carry-out additional enquiries using ‘Future Groups’ and ‘Membership Forums’ are consulted. These are the representatives of the larger membership and any areas likely to offer the most resistance will surface. This is important following challenges posed by uncertainty of some work packages.
6. **Refine the intentions of the change process, ensuring the membership concern are taken into account?** The importance of information in understanding the uncertainties of refurbishment processes has been highlighted in the foregoing chapters of this study due to the fragmentation and complexity associated with refurbishment schemes. At this level of the framework, it requires all areas of uncertainty to be identified before going further in the project. If the answer is a YES, then it requires moving to the next phase of the framework, however, where the answer is a NO, then the project should move to the next level in the same phase.
7. **Develop bulletins to resolve any premonitions – emotions associated with change (debunking the myths):** This must be done to maintain the ambidextrous position so that members who prefer the traditional position are nested in the change process while on the other the institution can also operate as a 21st-century entity, adopting a commercial flavour to their mission statements.

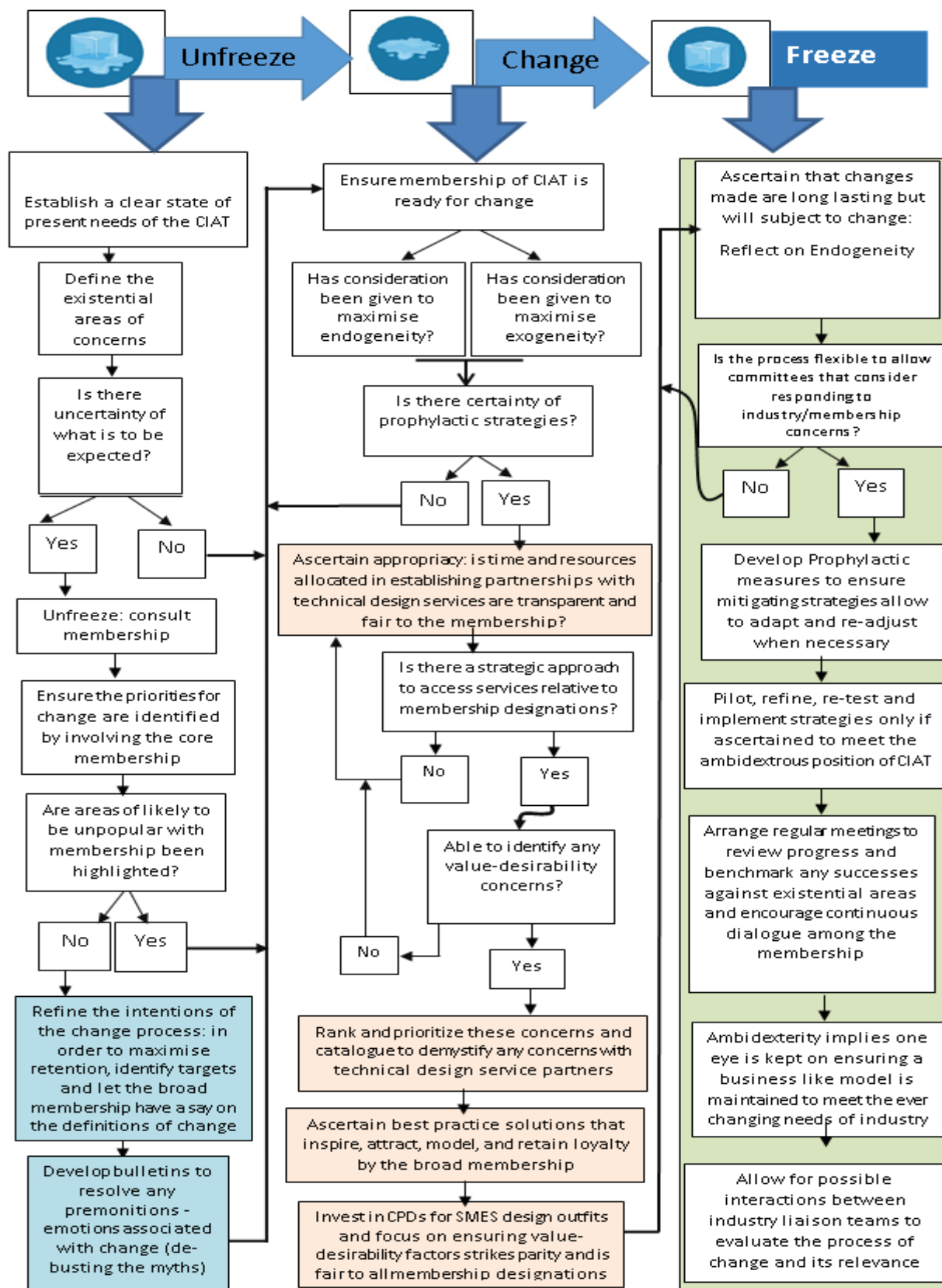


Figure 8.2: Conceptual framework of CIAT's institutional change

Phase two: Change Phase

1. **Ensure membership of CIAT is ready for change.** Following the previous stage in the previous Phase, this first level of Phase two requires that certainty is established about whether issues that deal with the internal matters and external reputation of the CIAT have been included in the change process. If the framework is to bring goodwill, then it is expected that the external reputation of the institution is addressed as part of the change process.
2. **Is there certainty about of Prophylactic strategies?** At this level of Phase two, it is critical to the framework that the discussion is around what works for the membership. Are the strategies in question ideal and appropriate to the demands the membership?
3. **Is there a strategic approach to delivery?** There is a need for a strategy to implement the change management process. As earlier mentioned, if the question requires an answer before moving further, then it is important to pose the question, why has a negative response been recorded? The model shows that the iterative process is to check back in the stages to ensure that the flow of information is clear.
4. **Is there a strategic approach to accessing services relative to membership designation?**
The expectation of having to pay a higher fee the higher the designation should also reflect in the services individual have access to. This is more critical among the management practices as the fees they pay should justify the end outcomes.
5. **Ascertain appropriateness of time and resources allocated to meet the expectations of the membership:** It is critical to the model that any uncertainty about access to resources and resolved in time. The kudos of belonging to a professional body nowadays lies in the difference that the membership brings to the income, standing in society and employability attributes of the member. Is CIAT membership able to fulfil all these?
6. **Rank and prioritise any concerns and catalogue so as to demystify any concerns relating to the technical design and service providers.** A good relationship ought to be established between CIAT and the partners who use the body as a means to access the

broader market for their services. They are in ensuring the individual value-desirability element of the model is addressed fairly; retention of membership hinges on this.

7. **Ascertain that best practice solutions inspire, attract, model and retain the confidence and loyalty in the membership:** to improve retention of membership, CIAT must invest in initiatives that ensure new entrants can be inspired to join, and once they join that they are modelled to various designations and that those designations actually makes a difference in the way their peers and society relates to them both on a professional and individual level. Members want to be of good standing and reputation in their community, and the professional has a bigger role to play in this.
8. **Invest in CPD for SMEs design outfits and focus on ensuring value desirability factors strike parity and are fair to all membership designations.** This ensures that drivers to change are met with increased desirability by the membership to belong to a professional body which brings something different in the way they are recognised by industry peers and the society at large.

Phase three: Freeze Phase

1. **Ascertain that changes made are long-lasting yet still pliable to change.** Before we can certainly lock the framework and keep the keys in a safe place, it is essential to ask whether the membership feel happy with the changes that have been introduced.
2. **Is the process flexible to allow the new committee to consider ongoing concerns from industry/membership?** Where the answer to the question is a NO, the process should allow individuals to go back to the framework so as to establish the measures that need to be in place.
3. **Develop prophylactic measures to ensure mitigating strategies to allow members to adapt and re-adjust:** this is critical because the value-desirability factors hinge on this.
4. **Pilot refines and retests and implement the strategy.** Ascertain that the ambidexterity measures are not overlooked.

5. **Arrange regular meetings to review progress and benchmark any successes or concerns.** Existential factors need to be monitored closely and so is the need to ensure feedback from industry is interweaved in the Prophylactic measures
6. **Ambidexterity implies one eye is kept on ensuring a business-like model is maintained** to meet the ever-changing needs of industry. At the same time, the other allows the traditional role of the professional body to continue as usual.
7. **Allow for possible interactions between industry liaison teams to evaluate the process of the change and its relevance:** This is to allow for continuity and to remove any residual premonitions about the whole change process. It also offers the opportunity to adjust and realign if only to remove the most prominent barriers to change.

8.4.1 Limitations of the framework

The study has identified the benefits and the application of the framework recommended for CIAT. The findings reported in this study only included membership for CIAT. While the inspiration for the work evolved from the roundtable meeting of all professional bodies in Europe of 2012, for logistical reasons and time constraints it was not possible to extend the findings to include other professional bodies. While the findings are peculiar to CIAT and the stratification suited the regional distribution of CIAT membership, the findings are therefore more biased towards CIAT. In this regard, therefore, the submission is presented as such although the recommendations and findings are likely to be of interest to other professional institutions.

The stratification for the study does not include membership from outside of the UK and as a results caution will have to be taken to generalise the findings as representing the interests of all CIAT members including those from outside of the UK. This said CIAT (2018a) itself acknowledges that 4 in 5 or 80% of all membership reside in the UK.

Furthermore, the model could have been validated to the membership, however, this was limited, both in scope and scaling. The model was presented to the future group forum comprising 30

members. The findings were well received but caution has to be made that the numbers are so limited to ascertain the credibility of the model.

8.5 Summary

This chapter provided a summary of the research findings and the knowledge contribution of this research. In order to understand the significance of each finding, literature was incorporated to support the views and claims of authors from previous studies.

Based on these research findings, the chapter was able to develop the conceptual framework of factors that may militate against change management. It also presented a logical flow of events which if adhered to should make the phase change associated with institution change more comfortable to handle. The responses given throughout this study are based on the membership represented across the UK. It is, therefore, a reflection of the feeling and premonitions that are atypical of any proposal to change management. The absence of a professional body change management framework helped the research to focus on a framework attuned to CIAT, its tradition and therefore focused on how CIAT itself can change as an organisation.

9.0 Conclusion and Recommendations

9.1 Introduction

The study set out to develop a conceptual framework for managing institutional change for the Chartered Institute of Technologists – CIAT. In fulfilling this aim, several objectives were outlined, which included the need to take a critical analysis of how the CIAT membership compared in the ranking of factors driving institutional change – FaDic. The second aim was to evaluate and ascertain the extent of the agreement as to the value and desirability derived from institutional change by the broad membership of CIAT -VaDic and third, to explore and document existential factors contributory to increased resistance to institutional change – Exfacirc. The fourth objective aimed to quantify and ascertain priorities for institutional change management (**Priareic**) while through objective five, the study set out to develop a conceptual framework for managing and delivering Institutional change for CIAT.

This chapter outlines and summarises the main conclusion and recommendations based on the study outcomes and from which the significance of what has been achieved relative to the initial aim and objectives is also considered.

The recommendation will be confined to further research aspects and will focus on the most key findings of the research which also stem from the interrogation of the literature review and findings therein; any inferences and extrapolations made from the data analyses have been carried out with the view to understanding the peculiarity of institutional change for the CIAT.

9.2 Conclusions

The research began with a comprehensive analysis of literature which suggested that professional bodies have some unique challenges to confront if they have to resolve the ongoing problem of dwindling membership. CIAT (2011) acknowledged the many challenges it faced and just as with other professional bodies, the economic downturn of 2008 remains a turning point for all professional institutions the decline of membership across the various designations has continued to be the biggest threat to their survival. Inherent in this is that when a country's economy is hit, it is the construction industry that takes the punches and yet the last one to get onto its feet. This suggests that most of the challenges identified under this study may not be exclusive to CIAT, but that among other professional body institutions, they may be widespread. These concerns come at a time when there is the increased growing pressure to ensure the higher education systems is not privatised through stealth, unsustainable policies and legislation which have been noted by CIAT (2011) to have gained momentum while exponentially, the impact of the next generation of IT and BIM on design, construction and use of buildings and the ever-increasing need to upskill in a fast-changing world are existential factors which every professional body has to hit heard on.

There is no widely used, understood and accepted framework to inform CIAT about the notable drivers, values and desirability factors that can be derived from institutional change management. Therefore to fill the gap, this exploratory research sought to provide a better understanding of how the membership compares in their recognition and ranking of factors driving institutional change.

From a review of literature, it was also clear that while value and desirability derived from institutional change by the broad, membership can be difficult to quantify, nonetheless, by collating and comparing the individual ratings, a general understanding of the patterns, themes and priority areas for focus as attributed to change management can be realised and interpreted.

It follows therefore that developing a conceptual framework that provides support for decision-makers in CIAT having to pinpoint the vital elements that define change management, its

significance and the opportunity the study offers to be able to identify and ascertain priorities for institutional change management were chosen as areas of focus for the study. Further exploration of the theory of change management and how the premonitions about the impending threats associated with change management are real, the extent to which most of the findings could be zeroed to the uncertainty of Brexit – for instance – or the concerns that the value-desirability factors cannot be ascertained among the membership.

Within this framework, the research carried-out extensive literature review to uncover a wide range of information which relates to the premonitions associated with the threat and impact of change management. Following the review of the relevant literature, the study performed several pilot surveys of semi-structured interviews at various educational committee workshops, at the time serving as president, vice president (education) and president of the CIAT.

The pilot interviews aided the study in further developing the research instrument, the basis upon which data collection was made possible. In a study of this nature, it was found necessary to have a population sample which is homogenous (current membership to CIAT) and one which gives an accurate representation of different designations represented by the CIAT as a Professional Institution. This was seen to be essential to the evaluation of the extent to which main research question, objectives and hypotheses set in chapter 1 could be fulfilled.

Data collection from the broad membership was somewhat restricted as it included collecting some sensitive personal information; as a result of the Data Protection Act of 1998 permission had to be sought from the CIAT executive to ensure the information collected from the membership in the 16 regional centres did not put the Institute in jeopardy. At this stage, proximity and the ease of data collection from the 16 regional centres meant that only the 16 UK centres were included in the study. The study, therefore, excluded the seven regional centres from the study for logistical reasons and also to maximise the homogeneousness of the sample being drawn from a geographical location with the built environment conditions that are similar.

In total, respondents for the study were chosen from what could be described as a subset of CIAT's membership across all the professional designations in the UK and Ireland. The designations captured and appeared to suggest that 56% of the members targeted were on non-corporate membership (Students (22%); Profile 7% and Associate 22%). The largest pool of the members was drawn from the Chartered membership, followed by that of 'Associate' and then 'Students' respectively.

The study, therefore, through stratification, generated a sample frame of least 1280 members. These were chosen based on simple randomisation of respective participants according to the designated profession to which they belong, namely: 320 Chartered Technologist; 160 Technicians; 160 Honorary; 240 students all adding up to a sample frame of 1280 CIAT membership.

The first set of results were in chapter four which analysed the factors driving institutional change which, as part of the pilot study presented to the Taskforce members, helped to reduce the factors which were identified from literature; in total, the number of factors was reduced from twenty-five to eleven.

All the eleven factors were essential to the study and especially so that they had to be whittled down to a given set of factors which respondents could easily handle when isolating one factor against another. At the aggregate level, three main enveloping factors emerged from the eleven factors, namely:

Endogeneity drivers towards CIAT's reputation and Relevance

The overarching theme generated by collapsing three factor-drivers to institutional change - FaDic related to the call for CIAT to instil initiatives more likely to promote the reputation of the Institute. This also included internally-driven incentives that can allow it to introduce its relevance to the broader membership. The findings indicate that members need to feel embraced as ambassadors of the institution and as such, deserve to have access to all the brands associated with the professional body.

Exogeneity drivers towards increasing loyalty and sustaining membership subscription

This overarching theme came from the collapse of five FiDic factors. They reflect the need for initiatives and incentives of widening membership beyond the traditional routes by looking at capturing new emerging fields and also to individuals who want to belong to more than one professional body.

Ambidextrous: access to AT Services

Further analysis showed that the lowest-scoring factors were those that define the extent to which CIAT, as an institution, needed to diversify in the design packages available to assist small to medium design firms; these are a specific type of members who are continually looking to affordable access to design licensing tools. The typical example of Education licences may have to be extended to firms that are struggling to get by. This is the one way to promote a competitive advantage even among companies that are just struggling to exist, let alone compete in the market. Given this outcome, it was relevant for CIAT to direct more effort into making partnership agreements with software design outfits such as Auto-Desk and Applecore so that more of the software packages are provided to CIAT practice firms and the sole designers with approved chartered membership at considerate rates.

The general outline and rank order of the factors indicates that regardless of the number of years that members have subscribed to CIAT when it came to ranking which of the eleven factors ranked the highest, the bivariate analysis of spearman ranks correlation revealed a high unanimity among the 214 respondents as which FaDic are more relevant.

Chapter five evaluated the extent of agreement among the broad membership of CIAT as to the value and desirability derived from institutional change. The study established that there is sufficient evidence that the number of years served as a fully paid CIAT member does not affect the practitioners' perception of value and desirability for institutional change. However, when an

analysis of variance was carried out, among respondents from various architectural specialisms, it emerged that individuals who supply architectural services and those who run their practices (firms) have a lot in common and expectations of what they see as value-desirability factors. For these respondents, the continued membership is meant to ensure they remain competitive and industry-relevant.

Given the aforementioned, and giving a congruent definition derived in the earlier sets of results, the study concluded that CIAT needed to invest in measures that ensured SMEs are supported and have access to various design packages at a reduced rate. For these respondents, their loyalty to CIAT counts for a lot, and so CIAT executive must be mindful of the need to focus on initiatives that bolster the institution reputation in the following key areas:

1. Initiatives that ensure the professional relevance & reputation of CIAT is maintained;
2. Options and diversification in the provision of technical design services;
3. Keeping an eye on the existential factors (cases for resistance especially if CIAT adopts a business-like model in the provision of its services)

Given the above observations, the study concluded that CIAT needed to show more clout by ensuring its policies and terms meet the ever-changing needs of the membership, society and align well to the market demands and trends.

In chapter six, the study further identified the factors likely to offer the most resistance to institutional change. The 241 study population were split based on years of practising architectural technology. This was done to determine the effect of experience on perception and ranking of factors believed to offer the most resistance to institutional change. The study surmised that experience does not explain the perception of those factors likely to offer resistance to institutional change. Respondents ranking was difficult to split on the basis of industry experience alone.

At the aggregate level, three definitional factors were generated to represent all the eight factors seen to offer the most resistance. Using a shadow cast of the phases, the first stage involved myth-

busting of ongoing concerns that any change would destroy the very traditions for which CIAT has come to be known. This fear, driven by those who believe the history and reputation might be undermined if the change is allowed to take place for the sake of it. The second threat to change is associated with perceived threats but at an individual level. The members who have held the membership of CIAT the longest might not see the benefits to be accrued from change, and this can generate a level of apprehensiveness. In anticipation, CIAT executive needed to show concern for these individuals by introducing initiatives that helped to address in advance such associated concerns.

The third area of concerns related to whether or not during institutional change, the membership would need to be fully consulted. It was observed that any void in information would generate further anxiety and therefore, more resistance to change. The countermodel was presented which offered solutions and what measures the study perceived to be useful and likely to nullify the areas highlighted as potential threats possible to offer the most resistance to change.

Chapter 7 identified the priority areas to focus on and which in turn would inform the success of the institutional change. Twelve factors were identified from the initial desk study and presented to practitioners in order to provide their rank order. The study identified four key areas that generated the most focus, namely:

- Value desirability: engaging in initiatives that *inspire* the new entrants;
- Exogeneity: *maintaining an international reputation*;
- Endogeneity: *Widening membership to consider dual membership*
- Ambidextrous: *Simplifying progression routes for designated chartered membership*

Consequently, the importance of each implied meaning or designated terms was discussed. From the twelve rankings of priority areas, the four areas were summed up by four key initiative –drivers, namely:

1. Inspire new entrants

2. Attract the members from a global audience
3. Model them to become life members and
4. Once registered to incentivise them to retain their membership loyalty for life.

The above four are seen as the four pillars to the Phase change and the executive of CIAT should introduce drivers for change cast around these above four-phase change principles.

9.3 Recommendations for further research

With the establishment of the driver-factors for change management and to improve the process and management of institutional change, perhaps it is also important to establish what specific industry-relevant services the membership would like CIAT to focus on. An in-depth study should be conducted to investigate what defines software and learning packages would be ideal and how to deal with the renewal of licenses.

Given the effect of information-uncertainty that surrounds the membership retention, a study should be carried out to investigate what would make membership to be life memberships?

Furthermore, as a result of the high levels of factors generated when trying to identify areas of focus during the institutional change process, there is no substitute for understanding the extent of which some members would choose to subscribe to life membership and what levels of cost this would impact of the members wanting to go down this path.

A study on how to enhance cooperation between professional bodies, so that if one is a member of one organisation that in itself should trigger the need not to be re-assessed by another professional organisation. The study should aim at understanding how to minimise friction between assessment teams from each professional body. Paying premium fees for wanting to belong to two professional bodies should instead attract a reduction in the institutional fees. This is quite exclusive and therefore one that deserves a separate and independent research consideration.

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Appendix

Tables

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APPENDIX 1

RESEARCH ETHICS CHECKLIST

Form RE1

This checklist should be completed for every research project which involves human participants. It is used to identify whether a full application for ethics approval needs to be submitted.

Before completing this form, please refer to the University Code of Practice on Ethical Standards for Research Involving Human Participants. The principal investigator and, where the principal investigator is a student, the supervisor, is responsible for exercising appropriate professional judgment in this review.

This checklist must be completed before potential participants are approached to take part in any research.

Section I: Applicant Details

| | | |
|-----|----------------------------------|-------------------------------|
| 1. | Name of Researcher (applicant): | Colin C Orr |
| 2. | Status (please click to select): | Postgraduate Research Student |
| 3. | Email Address: | |
| 4a. | Contact Address: | |
| 4b. | Telephone Number: | |

Section II: Project Details

| | | |
|----|----------------|---|
| 5. | Project Title: | 'Managing Institutional Change For The 21 st Century: 'Architectural Technology as a Profession In Society'. |
|----|----------------|---|

Section III: For Students Only:

| | | |
|----|---|--|
| 6. | Course title and module name and number where appropriate | Degree of Doctor of Philosophy by Practice |
| | School/Centre: | School of Engineering, Sports and Sciences |
| 7. | Supervisor's or module leader's name: | Dr Margaret Nelson |
| 8. | Email address: | |
| 9. | Telephone extension:: | |

Declaration by Researcher (Please tick the appropriate boxes)

| | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | I have read the University's Code of Practice |
| <input checked="" type="checkbox"/> | The topic merits further research |
| <input checked="" type="checkbox"/> | I have the skills to carry out the research |
| <input checked="" type="checkbox"/> | The participant information sheet, if needed, is appropriate |
| <input checked="" type="checkbox"/> | The procedures for recruitment and obtaining informed consent, if needed, are appropriate |
| <input checked="" type="checkbox"/> | The research is exempt from further ethics review according to current University guidelines |
| <input checked="" type="checkbox"/> | Where relevant, I have read the ethical guidelines of the regulatory body that is relevant to my discipline and verify that the research adheres to these guidelines |

Comments from Researcher, and/or from Supervisor if Researcher is Undergraduate or Taught Postgraduate student:

N/A

Section IV: Research Checklist

Please answer each question by ticking the appropriate box:

| | YES | NO |
|---|--------------------------|-------------------------------------|
| 1. Will the study involve participants who are particularly vulnerable or who may be unable to give informed consent (e.g. children, people with learning disabilities, emotional difficulties, problems with understanding and/or communication, your own students)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited (e.g. students at school, members of self-help group, residents of nursing home)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Will deception be necessary, i.e. will participants take part without knowing the true purpose of the study or without their knowledge/consent at the time (e.g. covert observation of people in non-public places)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Will the study involve discussion of topics which the participants may find sensitive (e.g. sexual activity, own drug use)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Will drugs, placebos or other substances (e.g. food substances, alcohol, nicotine, vitamins) be administered to or ingested by participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Will blood or tissues samples be obtained from participants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Will pain or more than mild discomfort be likely to result from the study? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Will the study involve prolonged or repetitive testing? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. Will participants' right to withdraw from the study at any time be withheld or not made explicit? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Will participants' anonymity be compromised or their right to anonymity be withheld or information they give be identifiable as theirs? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13. Might permission for the study need to be sought from the researcher's or from participants' employer? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 14. Will the study involve recruitment of patients or staff through the NHS? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If ALL items in the Declaration are ticked AND if you have answered NO to ALL questions in Section IV, **send the completed and signed Form RE1 to your School/Centre Research Ethics Officer** for information. You may proceed with the research but should follow any subsequent guidance or requests from the School/Centre Research Ethics Officer or your supervisor/module leader where appropriate. Undergraduate and taught postgraduate students should retain a copy of this form and submit it with their research report or dissertation (bound in at the beginning). MPhil/PhD students should submit a copy to the Board of Studies for Research Degrees with their application for Registration (R1). **Work which is submitted without the appropriate ethics form will be returned unassessed.**

If ANY of the items in the Declaration are not ticked AND / OR if you have answered YES to ANY of the questions in Section IV, you will need to describe more fully in Section V of the form below how you plan to deal with the ethical issues raised by your research. **This does not mean that you cannot do the research, only that your proposal will need to be approved by the School/Centre Research Ethics Officer or School/Centre Research Ethics Committee or Sub-committee. When submitting the form as described in the above paragraph you should substitute the original Section V with the version authorized by the School/Centre Research Ethics officer.**

If you answered YES to **question 14**, you will also have to submit an application to the appropriate external health authority ethics committee, after you have received approval from the School/Centre Research Ethics Officer/Committee and, where appropriate, the University Research Ethics Committee.

Section V: Addressing Ethical Problems

If you have answered YES to any of questions 1-12 please complete below and submit the form to your School/Centre Research Ethics Officer.

| |
|--|
| Project Title |
| |
| Principal Investigator/Researcher/Student |
| |
| Supervisor |
| |
| Summary of issues and action to be taken to address the ethics problem(s) |
| |

Please note that it is your responsibility to follow the University's Code of Practice on Ethical Standards and any relevant academic or professional guidelines in the conduct of your study. **This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.** Any significant change to the design or conduct of the research should be notified to the School/Centre Research Ethics Officer and may require a new application for ethics approval.

Signed: _____  Principal Investigator/Researcher

Approved: _____  Supervisor or module leader (where appropriate)

Date: 28/09/2012 _____

For use by School/Centre Research Ethics Officer:

• No ethical problems are raised by this proposed study - Retain this form on record

• Appropriate action taken to maintain ethical standards

• The research protocol should be revised to eliminate the ethical concerns or reduce them to an acceptable level, using the attached suggestions

• Please submit School/Centre Application for Ethics Approval (Form RE2(D))

• Please submit University Application for Ethics Approval (Form RE2(U))

Retain this form on record and return a copy of section V to Researcher

Signed: _____ 

Date: 28/09/2012 _____

APPENDIX 2

fab/co/PhD

18 September 2015

Research & Graduate School
University of Bolton
Deane Road
Bolton
BL3 SAB



To whom it may concern

Dear Sirs

Re: Colin Orr

I have been contacted by Colin Orr to clarify his contribution in practice to work that we have collaborated on for the purpose of registration for the degree of PhD by Retrospective Practice at the University of Bolton.

Detailed below is confirmation of the work Colin has undertaken for BIAT/CIAT as a Chartered Member in relation to particular strategic objectives:

1. BIAT (2001)

Increased the profile of the discipline of Architectural Technology through engagement with local schools, colleges and universities.

Excerpt minutes regional committee meetings NW03_2001. Prepared schedule of events and meeting with related associations; Construction Industry Training Board (CITB).

Education Officer's Reports 2001/3 [60%].

2. Education Committee (2003)

Working with CIAT's Education Director, restructured the Education Committee creating four sub-groups each.

Overseeing the implementation of Professional Occupational Performance (POP) Records, and the two grades of membership; Architectural Technician and Architectural Technologists.

Excerpt minutes of the Executive Board, Council and Education Committee meeting BIAT2003. Prepared the strategy, budget and implementation of the re-structure leading the process change of the Committee. Excerpt Annual Report 2003/4 [70%].

3. Education Committee (2005)

Reviewed first strategy for the Institute post its Incorporation by Royal Charter.

Excerpt minutes of the Executive Board, Council and Education Committee meeting BIAT/CIAT 2005-07. Prepared the strategy, budget and implementation of the re-structure leading the process [70%].

4. Standards/Accreditation (2005)

Mid-term review of POP Records.

Excerpt minutes of the Executive Board, Council and Education Committee meeting BIAT/CIAT 2005-07. Prepared the strategy, budget and implementation of the re-structure leading the process.

Prosci 3-Phase Change Management Process [70%].

5. Quality Assurance Agency, QAA (2007)

Reviewed the first subject Benchmark Statement for Architectural Technology and drafting 2007 revision.

Excerpt of the QAA Panel Meeting. Drafting and presentation. [50%].

6. Education Committee (2010)

Formed the Membership Futures group overseeing Professor Sam Allwinkle and introduction of the Membership Strand outcomes.

Excerpt of the information meeting 2004/2007. QAA SBS Architectural Technology 2007. [50%].

7. Executive Board (2010)

Piloting the progression route via the Membership Strand Project.

Excerpt Executive Board, Council & Membership Strand meetings 2010/11. Design of the membership framework and ensuring its implementation. leading the decision-making process. [50%].

8. Executive Board (2011)

Leading the Strategy process and networking groups.

Excerpt Executive Board, Council & Membership Strand meetings 2011.

Excerpt Workshop 2011-2012 strategy analysis paper results focus groups, 2012.

Process design, leading the strategy process within the Board of CIAT participation during the process. [60%].

9. **Executive Board (2013)**

Leading the promotion of the Strategic Plan internally and externally.

Excerpt Executive Board and Council meetings 2013. Process design, leading the process within the board of CIAT. [65%].

10. **CIAT Strategic Plan 201.3-2018- [60%]**


Alongside the CEO, formally signed and launched the Strategic Plan and Corporate Plan.

Should you require additional information on the work, reach and impact of Colin Orr within the Institute, as Regional Education Officer, Vice President Education, President Elect, President and Immediate Past President please do contact me.

Yours faithfully



LLB (Hons) HonDTech FRSA
Chief Executive

Cc: 
**Reader and Research Team Lead, Inclusive and Sustainable Environments,
Research & Graduate School, Institutional Lead - Erasmus+, University
of Bolton**

APPENDIX 3

Interview Cover Letter



Semi-Structured Questionnaire

Dear Sir/Madam,

Managing Institutional Change: Architectural Technology as a Profession in Society

Thank you very much for your interest in contributing to this study. I am a Doctor of Philosophy (PhD) degree student in the school of Architecture and Built Environment at the University of Wolverhampton. The research is aimed at developing a framework for managing institutional change for the Chartered Institute of Technologists – CIAT and how this change can lead to improvement.

This information sheet helps you to appreciate the research's intended objectives. Please take time to read the following information carefully.

1. At this stage, we intend to gather as much information as possible. Several pilot stages have been conducted before getting to this stage. .
2. You have been invited at what is a final stage in the research process. For ease of administration, the questions are all closed ended so that it takes less time for you to complete
3. Should you agree to take part, be rest assured that ethical Approval with University of the Wolverhampton has been obtained? All the information you provide will be treated with strict confidence and will ONLY be used for the purpose of this research. The data will be treated in accordance with the Data Protection Act 2003 Rvsd (2018) and any identifying information will be disposed of in a secure manner.

If you require any further information please, do not hesitate to contact me at the following address:

Colin Clive Orr

Head of the Department of Architecture

School of Architecture and Built Environment

The University of Wolverhampton

Wulfuna Street; Wolverhampton – WV1 1LY.

APPENDIX 4

Interview Consent Sheet: Future Groups Forum



Managing Institutional Change: Architectural Technology as a Profession in Society

Please tick box

I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions

☐

I understand that my participation is voluntary and I can withdraw at any time

☐

I agree to take part in the above study

☐

I am aware of, and give consent to audio recording of the structured interview and to answers provided to open-ended questions.

☐

Name -----

Signature -----

Date -----

APPENDIX 5

Pilot testing of the Questionnaire: Interview Questions – Future Group Forum



Managing Institutional Change: Architectural Technology as a Profession in Society

Discussion Questions for Semi-Structured Interviews

At the beginning of this week, a questionnaire was given for you to complete. It is now time to complete and inform the researcher of your experience of completing the questionnaire. Please answer as many of the questions below as you can. What do you make of it in terms of its suitability? Does it address the issues pertinent to change management for CIAT? Please give your comments in the box at the end.

- What is your opinion on the structure and content of this research questionnaire?
- Having gone through the questionnaire in its entirety, do you agree that the objectives of this research focusing on CIAT are likely to be achieved?
- All the questions are closed and some are on Likert scale coding introduced to measure the extent of agreement between participants' perception, what do you think of it?
- Change Management is often a divisive issue, some agree to change while many may disagree, why fix what is not broke? Building refurbishment is claimed to carry more risk than an equivalent new-build project. Based on your experience, do you think that the drivers, areas likely to generate resistance to change as well as areas of priorities identified in this research reflect those associated with CIAT as an organisation?
- What is your opinion on targeting the wider membership in all the 16 regions in the UK?
- Do you think the content of the questionnaire will not discourage participants from taking part in the research?
- In what way can this questionnaire be improved in order to achieve the research objectives?

If there are any other issues you would like to add please note them below and these will be taken into consideration anonymously by the researcher.

.....
.....

Thank you!

Colin Orr Vice President Education.

APPENDIX 6

*Pilot testing of the Questionnaire: Response to Interview Questions – **Future Group Forum***



Managing Institutional Change: Architectural Technology as a Profession in Society

Discussion as to suitability of the Questionnaire:

Name:

Job title/Position:

Designated membership:.....

Company name and address:

Number of years of full subscription to CIAT

Date of this pilot questionnaire has been completed:

Response to interview questions:

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APPENDIX 7

Research Questionnaire



Managing Institutional Change: Architectural Technology as a Profession in Society

Please respond to the following questions by ticking [✓] in the appropriate box.

Note: *For the purpose of this study, your membership with CIAT is important, please, reflect on this whenever you are answering all the questions. Please note that your personal details will not be revealed and where you are asked for personal details such as your name please only give your first name but you kindly requested that you complete all the questions in full. Let me thank you in advance for your support and time.*

Colin Clive Orr

Past President of CIAT and Vice President Education

Section 1: General Information

1. Name of Participant (first name only)

2. Which of the following best describes your Gender:

Male []

Female []

3. Which of the following best describes your Age?

25 to 29 yrs []

30 to 34 yrs []

35 to 39 yrs []

40 to 44 yrs []

45 to 49 yrs []

50 to 54 yrs []

55 to 59 yrs []

60yrs+ []

4. Membership Designation with CIAT

Chartered []

Associate []

Student []

Profile []

Technician []

5. What is your Area of professional specialism?

- Design/Architecture services only []
- Academic []
- Practice Management []
- Surveying, design and refurbishment []
- Specialist (heritage trade sub/contractor) []

6. How many years of Architectural Practice do you have?

- 0 – 4 yrs []
- 5 – 9 yrs []
- 10 – 14 yrs []
- 15 – 19 yrs []
- Over 21 yrs []

7. How many years of CIAT professional membership do you have?

- 0 – 4 yrs []
- 5 – 9 yrs []
- 10 – 14 yrs []
- 15 – 19 yrs []

8. What would you say is the predominant projects your organisation undertakes?

- Housing []
- Education Specialist and general []
- Healthcare []
- Commercial []
- Both historical and non-historical []

9. Number of employees in your organisation

- Under 10 []
- 11 – 50 []
- 51 – 100 []
- Above 100 []

Section 2: Question 10. About Factors Driving Institutional Change -FaDiC

| The following factors are considered to be relevant to change management of CIAT. Using a scale 1 to 6, please indicate how important (relevant) each of factors is where 1 = extremely important, 2 = very important, 3 = important, 4 = undecided, 5 = unimportant and 6 = not at all important | Extremely important 1 | 2 Very important | 3 Important | 4 Undecided | 5 Unimportant | 6 Not at all important |
|---|-----------------------|---------------------|----------------|----------------|------------------|---------------------------|
| 1. Change the format for professional assessment | | | | | | |
| 2 Endpoint assessment for the new membership | | | | | | |
| 3. Ensure assessment route to corporate membership is alterable | | | | | | |
| 4. Improve the perceived value of CIAT membership | | | | | | |
| 5 Reviewing qualification at point of entry | | | | | | |
| 6. Accommodate entry fees/entry points for the new memberships | | | | | | |
| 7. Widen gates of membership to other professionals bodies | | | | | | |
| 8. Open up more routes to professional designation of CIAT | | | | | | |
| 9. Improve membership's access to technical/specifications/ toolkits | | | | | | |
| 10. Lack of recognised pillars for CIAT membership | | | | | | |
| 11. Diversify design, management and practice toolkits to a wider pool | | | | | | |

11. Significance of Perceived Value-Desirability derived from Institutional Change of CIAT (VaDIc)

| The significance of institutional change is represented by each of the following twelve factors. Using a scale of 1 to 5 , where 5= very significant, 4= significant, 3 = undecided, 2= insignificant, 1= very insignificant, indicate how significant each of the following factors is to improving CIAT's reputation and its professional relevance to the members and society at large | Very Significant 5 | 4 Significant | 3 Undecided | 2 Insignificant | Very Insignificant 1 |
|---|--------------------|------------------|----------------|--------------------|----------------------|
| 1. Transparency and professionalism | | | | | |
| 2. Continued access to professional services -CPD | | | | | |
| 3. Protection of the discipline of technologists | | | | | |
| 4. International recognition | | | | | |
| 5. Professional designation and standing in society | | | | | |
| 6. Collaboration and inclusivity | | | | | |
| 7. Equality and diversity | | | | | |
| 8. Health welfare and safety | | | | | |
| 9. Innovation and creativity | | | | | |
| 10. Quality and standards | | | | | |
| 11. Integrity and ethical behaviour | | | | | |
| 12. An anchor for business growth and prosperity | | | | | |

12. Factors Contributory to increased Resistance to Institutional Change - Exfacirc

| The following are factors likely to give the most resistance to institutional change to CIAT. using a scale of 0 to 5, rank each of the factors where 5 = very high resistance; 4 = high resistance; 3 = medium resistance; 2 = low resistance; 1 = very low resistance, 0 = least resistance | Very high resistance 5 | High resistance 4 | Moderate resistance 3 | Low resistance 2 | Very low resistance 1 | Least resistance 0 |
|---|------------------------|-------------------|-----------------------|------------------|-----------------------|--------------------|
| 1. Successful institutional change may not come easily | | | | | | |
| 2. Might hinder opportunity to participate and shape future of the institution | | | | | | |
| 3. There may be hidden implications for individual membership | | | | | | |
| 4. Other institutions are not seeking change | | | | | | |
| 5. There is inadequate information about the need for this change | | | | | | |
| 6. Membership need further consultation | | | | | | |
| 7. Change might impede the already established traditions of the institution | | | | | | |
| 8. There is no disaffection with the status quo | | | | | | |

13. Priority areas for Institutional Change - Priareic

| The following areas are considered to be the most relevant and focus areas for change management of CIAT. Using a scale 0 to 5, please indicate how important (relevant) each of factors where 5 = extremely important, 4 = very important, 3 = important, 2 = undecided, 1 = unimportant and 0 = not at all important | Extremely important 5 | Very important 4 | Important 3 | Undecided 2 | Unimportant 1 | Not at all important 0 |
|--|-----------------------|------------------|-------------|-------------|---------------|------------------------|
| 1. Increase the reputation of CIAT as a professional body | | | | | | |
| 2. Widen and reach out for more integration with RIBA and beyond with other professional bodies. | | | | | | |
| 3. Focus on design software by forming alliances with software manufacturers | | | | | | |
| 4. Ensure mentors are present at every referral in the assessment structure | | | | | | |
| 5. Broaden the appeal for CIAT across other professional bodies | | | | | | |
| 6. Open professional route via apprenticeships to attract new entrants to CIAT | | | | | | |
| 7. Increase and sustain the international profile of CIAT | | | | | | |
| 8. Align membership assessment to oblige members from other prof bodies | | | | | | |
| 9. Reduce deferrals for progression via mentorship for newly qualified | | | | | | |
| 10. Ensure CIAT offers a 21st century dexterities impressed on A/Technologist | | | | | | |
| 11. Widen strategies to combat the ever increasing age gap in CIAT | | | | | | |
| 12. Consider revising the progression requirements | | | | | | |

Thank you for your time and effort. Colin Clive Orr, Past CIAT President/VP Education

| Count | Q1F/name only | Q2 YATP | Q3 YECIAT (Yrs of CIAT membership) | Q4 Ageban | Q5MeDesi | Q6 Gender | Q7AAS | Q8 SOF -(Size of Firm) | Q9 PPT (Predominance of Project Type) | Q10 FaDiC1 | FaDiC2 | FaDiC3 | FaDiC4 | FaDiC5 | Q8 FaDiC2 | FaDiC6 | FaDiC7 | FaDiC8 | FaDiC9 | FaDiC3 |
|-------|---------------|-------------|--|-------------|----------|-----------|-------|---------------------------|---|------------|--------|--------|--------|--------|-----------|--------|--------|--------|--------|--------|
| 1 | George | 20 yrs + | 10 to 14 yrs | 35 to 39yrs | 1 | 1 | 4 | 1 | 4 | 1 | 3 | 1 | 1 | 5 | 1 | 3 | 3 | 6 | 5 | 3 |
| 2 | Emmanuel | 20 yrs + | 10 to 14 yrs | 35 to 39yrs | 1 | 1 | 4 | 1 | 1 | 5 | 3 | 1 | 1 | 3 | 3 | 3 | 6 | 6 | 6 | 2 |
| 3 | Andy | 15 to 19yrs | 5 to 9 yrs | 40 to 44yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 6 | 5 | 2 | 3 | 6 | 6 | 4 |
| 4 | James | 10 to 14yrs | 5 to 9 yrs | 50 to 54yrs | 2 | 1 | 1 | 1 | 4 | 6 | 6 | 1 | 1 | 4 | 2 | 4 | 5 | 6 | 6 | 5 |
| 5 | Steve | 5 to 9yrs | 5 to 9 yrs | 50 to 54yrs | 1 | 1 | 1 | 1 | 5 | 5 | 6 | 3 | 1 | 4 | 4 | 4 | 4 | 6 | 6 | 6 |
| 6 | Peter | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 4 | 3 | 4 | 3 | 4 | 1 | 2 | 6 | 5 | 2 | 6 | 6 | 6 | 5 |
| 7 | Arthur | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 5 | 1 | 3 | 5 | 5 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 6 |
| 8 | Catherine | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 5 | 2 | 1 | 1 | 5 | 4 | 5 | 1 | 1 | 5 | 6 | 3 | 2 | 6 | 6 | 3 |
| 9 | Olami | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 1 | 3 | 4 | 2 | 6 | 1 | 1 | 4 | 3 | 5 | 6 | 6 | 6 | 6 |
| 10 | John | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 4 | 4 | 3 | 2 | 6 | 6 | 4 |
| 11 | Pete | 20 yrs + | 15 to 19 yrs | 60yrs+ | 1 | 1 | 4 | 1 | 1 | 5 | 6 | 1 | 1 | 5 | 6 | 2 | 4 | 6 | 6 | 5 |
| 12 | Rakhman | 10 to 14yrs | 0 to 4 yrs | 35 to 39yrs | 2 | 1 | 1 | 3 | 4 | 4 | 6 | 3 | 1 | 4 | 6 | 2 | 5 | 6 | 6 | 5 |
| 13 | Andrew | 10 to 14yrs | 15 to 19 yrs | 45 to 49yrs | 2 | 1 | 3 | 1 | 2 | 3 | 4 | 1 | 1 | 5 | 3 | 5 | 6 | 6 | 6 | 4 |
| 14 | Webster | 10 to 14yrs | 5 to 9 yrs | 45 to 49yrs | 2 | 1 | 2 | 1 | 5 | 2 | 4 | 3 | 1 | 6 | 6 | 5 | 6 | 6 | 6 | 6 |
| 15 | Justine | 20 yrs + | 10 to 14 yrs | 60yrs+ | 1 | 1 | 4 | 3 | 3 | 4 | 6 | 3 | 1 | 5 | 6 | 1 | 6 | 6 | 6 | 6 |
| 16 | Theresa | 20 yrs + | 0 to 4 yrs | 25 to 29yrs | 1 | 2 | 5 | 1 | 4 | 5 | 4 | 3 | 1 | 6 | 2 | 6 | 5 | 6 | 5 | 3 |
| 17 | Patel | 0 to 4yrs | 5 to 9 yrs | 25 to 29yrs | 1 | 1 | 2 | 2 | 1 | 4 | 6 | 3 | 1 | 5 | 5 | 5 | 6 | 6 | 6 | 6 |
| 18 | Simon | 20 yrs + | 20 yrs + | 55 to 59yrs | 1 | 1 | 5 | 1 | 4 | 3 | 4 | 2 | 1 | 4 | 1 | 5 | 5 | 6 | 6 | 6 |
| 19 | Abdul | 15 to 19yrs | 5 to 9 yrs | 45 to 49yrs | 1 | 1 | 1 | 1 | 5 | 5 | 3 | 4 | 1 | 5 | 2 | 6 | 5 | 5 | 6 | 3 |
| 20 | Scot | 10 to 14yrs | 20 yrs + | 55 to 59yrs | 2 | 1 | 4 | 3 | 4 | 5 | 2 | 3 | 1 | 6 | 4 | 5 | 6 | 6 | 6 | 6 |
| 21 | Radcliffe | 10 to 14yrs | 10 to 14 yrs | 50 to 54yrs | 1 | 1 | 3 | 1 | 4 | 1 | 6 | 3 | 1 | 5 | 6 | 5 | 6 | 6 | 6 | 6 |
| 22 | Anderson | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 2 | 1 | 4 | 3 | 4 | 3 | 1 | 5 | 2 | 5 | 5 | 6 | 6 | 5 |
| 23 | Kim | 15 to 19yrs | 0 to 4 yrs | 40 to 44yrs | 2 | 2 | 5 | 1 | 1 | 3 | 2 | 3 | 1 | 6 | 5 | 6 | 5 | 6 | 6 | 6 |
| 24 | Jenny | 5 to 9yrs | 0 to 4 yrs | 25 to 29yrs | 5 | 2 | 5 | 3 | 1 | 4 | 5 | 3 | 1 | 6 | 5 | 6 | 5 | 6 | 6 | 6 |
| 25 | Provin | 20 yrs + | 20 yrs + | 45 to 49yrs | 1 | 1 | 1 | 1 | 4 | 2 | 6 | 3 | 1 | 4 | 6 | 6 | 5 | 6 | 6 | 6 |
| 26 | Edward | 5 to 9yrs | 5 to 9 yrs | 40 to 44yrs | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 1 | 1 | 5 | 5 | 5 | 2 | 6 | 6 | 3 |
| 27 | Lee | 10 to 14yrs | 10 to 14 yrs | 60yrs+ | 1 | 1 | 4 | 3 | 2 | 4 | 6 | 3 | 1 | 4 | 6 | 1 | 2 | 6 | 6 | 6 |
| 28 | Rachael | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 5 | 2 | 2 | 1 | 4 | 2 | 5 | 1 | 1 | 6 | 4 | 6 | 4 | 6 | 6 | 6 |
| 29 | Andre | 10 to 14yrs | 10 to 14 yrs | 40 to 44yrs | 3 | 1 | 1 | 3 | 4 | 5 | 4 | 4 | 1 | 6 | 6 | 5 | 6 | 6 | 6 | 6 |
| 30 | Gallimore | 5 to 9yrs | 5 to 9 yrs | 45 to 49yrs | 1 | 1 | 1 | 1 | 5 | 4 | 5 | 1 | 1 | 4 | 6 | 4 | 3 | 6 | 6 | 3 |
| 31 | Amoah | 10 to 14yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 1 | 1 | 1 | 4 | 5 | 6 | 3 | 1 | 6 | 5 | 4 | 3 | 6 | 6 | 6 |
| 32 | Michale | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 2 | 3 | 1 | 6 | 6 | 2 | 1 | 6 | 5 | 2 | 5 | 6 | 6 | 6 |
| 33 | Bonner | 10 to 14yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 1 | 1 | 1 | 4 | 1 | 6 | 1 | 1 | 5 | 4 | 3 | 6 | 6 | 6 | 6 |
| 34 | Ahmed | 15 to 19yrs | 10 to 14 yrs | 35 to 39yrs | 1 | 1 | 5 | 1 | 5 | 3 | 5 | 1 | 1 | 5 | 5 | 4 | 4 | 6 | 6 | 6 |
| 35 | Mathews | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 5 | 3 | 4 | 1 | 4 | 2 | 1 | 4 | 3 | 6 | 5 | 6 | 6 | 6 |
| 36 | Benjamin | 20 yrs + | 20 yrs + | 50 to 54yrs | 1 | 1 | 4 | 1 | 4 | 3 | 6 | 1 | 1 | 3 | 3 | 4 | 5 | 5 | 6 | 3 |
| 37 | Elton | 20 yrs + | 10 to 14 yrs | 50 to 54yrs | 1 | 1 | 3 | 1 | 5 | 4 | 5 | 3 | 1 | 5 | 6 | 4 | 6 | 6 | 6 | 6 |
| 38 | Jai | 15 to 19yrs | 5 to 9 yrs | 45 to 49yrs | 2 | 1 | 4 | 2 | 4 | 2 | 6 | 2 | 1 | 6 | 5 | 4 | 6 | 6 | 6 | 3 |
| 39 | Rob | 10 to 14yrs | 0 to 4 yrs | 30 to 34yrs | 2 | 1 | 4 | 2 | 5 | 3 | 4 | 1 | 1 | 6 | 3 | 6 | 5 | 6 | 6 | 6 |
| 40 | Lengeni | 5 to 9yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 1 | 1 | 1 | 4 | 6 | 6 | 1 | 1 | 4 | 6 | 5 | 6 | 6 | 6 | 6 |
| 41 | David | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 5 | 2 | 4 | 5 | 4 | 3 | 1 | 6 | 5 | 6 | 2 | 6 | 6 | 6 |
| 42 | Rosemary | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 3 | 1 | 4 | 1 | 6 | 3 | 1 | 4 | 4 | 6 | 5 | 6 | 6 | 6 |
| 43 | Lilly | 5 to 9yrs | 0 to 4 yrs | 25 to 29yrs | 4 | 2 | 1 | 1 | 5 | 4 | 5 | 1 | 1 | 3 | 6 | 3 | 2 | 6 | 6 | 6 |
| 44 | Rastam | 10 to 14yrs | 0 to 4 yrs | 35 to 39yrs | 3 | 1 | 1 | 1 | 4 | 2 | 3 | 4 | 1 | 4 | 6 | 2 | 5 | 6 | 6 | 6 |
| 45 | Mohammed | 20 yrs + | 10 to 14 yrs | 40 to 44yrs | 1 | 1 | 1 | 2 | 3 | 1 | 6 | 3 | 1 | 3 | 3 | 4 | 5 | 6 | 5 | 6 |
| 46 | Heywood | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 4 | 2 | 1 | 1 | 4 | 5 | 5 | 2 | 1 | 6 | 4 | 5 | 5 | 6 | 6 | 6 |
| 47 | Julian | 20 yrs + | 20 yrs + | 55 to 59yrs | 1 | 1 | 5 | 1 | 4 | 5 | 4 | 3 | 1 | 4 | 2 | 6 | 5 | 6 | 6 | 6 |

| Count | Q1F/name only | Q2 YATP | Q3 YECIAT (Yrs of CIAT membership) | Q4 Ageban | Q5MeDesi | Q6 Gender | Q7AAS | Q8 SOF -(Size of Firm) | Q9 PPT (Predominance of Project Type) | Q10 FaDiC1 | FaDiC2 | FaDiC3 | FaDiC4 | FaDiC5 | Q8 FaDiC2 | FaDiC6 | FaDiC7 | FaDiC8 | FaDiC9 | FaDiC3 |
|-------|---------------|-------------|--|-------------|----------|-----------|-------|---------------------------|---|------------|--------|--------|--------|--------|-----------|--------|--------|--------|--------|--------|
| 48 | Tansey | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 1 | 4 | 1 | 4 | 1 | 4 | 1 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 3 |
| 49 | Leonard | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 4 | 1 | 4 | 6 | 6 | 3 | 1 | 5 | 6 | 5 | 4 | 6 | 6 | 6 |
| 50 | Omino | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 5 | 1 | 3 | 2 | 1 | 1 | 5 | 3 | 1 | 6 | 6 | 4 | 6 | 6 | 6 | 6 |
| 51 | Samatha | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 4 | 2 | 1 | 1 | 4 | 5 | 4 | 1 | 1 | 4 | 6 | 5 | 4 | 6 | 5 | 6 |
| 52 | Ousama | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 5 | 1 | 4 | 1 | 2 | 3 | 4 | 2 | 1 | 5 | 5 | 4 | 3 | 6 | 6 | 6 |
| 53 | Charlotte | 10 to 14yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 2 | 2 | 1 | 4 | 2 | 5 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 6 |
| 54 | Mark | 10 to 14yrs | 0 to 4 yrs | 30 to 34yrs | 3 | 1 | 4 | 1 | 5 | 3 | 4 | 2 | 1 | 5 | 5 | 6 | 5 | 6 | 6 | 6 |
| 55 | Ayoola | 5 to 9yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 2 | 3 | 2 | 1 | 5 | 6 | 2 | 1 | 5 | 4 | 2 | 6 | 5 | 6 | 6 |
| 56 | Musama | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 4 | 2 | 4 | 2 | 2 | 3 | 5 | 1 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 6 |
| 57 | Sean | 10 to 14yrs | 0 to 4 yrs | 30 to 34yrs | 2 | 1 | 4 | 1 | 5 | 3 | 4 | 2 | 1 | 5 | 3 | 6 | 5 | 6 | 6 | 5 |
| 58 | Chris | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 4 | 2 | 4 | 5 | 5 | 4 | 1 | 6 | 3 | 4 | 5 | 6 | 6 | 4 |
| 59 | Tshole | 15 to 19yrs | 0 to 4 yrs | 30 to 34yrs | 1 | 2 | 5 | 2 | 4 | 3 | 6 | 1 | 1 | 5 | 5 | 6 | 6 | 6 | 6 | 6 |
| 60 | Luke | 10 to 14yrs | 0 to 4 yrs | 30 to 34yrs | 1 | 1 | 4 | 2 | 5 | 3 | 4 | 3 | 1 | 5 | 3 | 6 | 5 | 6 | 6 | 6 |
| 61 | Olivia | 5 to 9yrs | 5 to 9 yrs | 25 to 29yrs | 3 | 2 | 1 | 1 | 4 | 1 | 2 | 1 | 1 | 3 | 6 | 4 | 5 | 6 | 6 | 6 |
| 62 | Lamont | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 5 | 1 | 3 | 4 | 4 | 3 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 3 |
| 63 | Brandina | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 5 | 2 | 2 | 3 | 4 | 2 | 5 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 6 |
| 64 | Abass | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 4 | 1 | 3 | 1 | 4 | 5 | 3 | 3 | 1 | 5 | 5 | 6 | 5 | 6 | 6 | 6 |
| 65 | Anabella | 0 to 4yrs | 5 to 9 yrs | 25 to 29yrs | 1 | 2 | 1 | 1 | 4 | 2 | 4 | 3 | 1 | 6 | 6 | 6 | 5 | 6 | 6 | 6 |
| 66 | Edgar | 5 to 9yrs | 5 to 9 yrs | 40 to 44yrs | 1 | 1 | 1 | 1 | 1 | 6 | 3 | 1 | 1 | 6 | 5 | 5 | 2 | 6 | 6 | 6 |
| 67 | Anvil | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 4 | 1 | 2 | 3 | 4 | 2 | 5 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 4 |
| 68 | Juliana | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 2 | 1 | 4 | 2 | 5 | 1 | 1 | 5 | 6 | 6 | 6 | 6 | 6 | 4 |
| 69 | Mitchel | 5 to 9yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 2 | 1 | 1 | 5 | 1 | 6 | 3 | 2 | 6 | 4 | 3 | 6 | 6 | 6 | 6 |
| 70 | Galloria | 5 to 9yrs | 5 to 9 yrs | 45 to 49yrs | 1 | 2 | 1 | 1 | 5 | 5 | 5 | 1 | 1 | 5 | 6 | 4 | 6 | 6 | 6 | 6 |
| 71 | Mulenja | 10 to 14yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 1 | 2 | 4 | 2 | 4 | 1 | 1 | 6 | 4 | 6 | 4 | 6 | 6 | 6 |
| 72 | Naomi | 10 to 14yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 1 | 1 | 4 | 3 | 6 | 1 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 73 | Michael | 20 yrs + | 20 yrs + | 55 to 59yrs | 1 | 1 | 2 | 3 | 2 | 5 | 4 | 1 | 1 | 6 | 4 | 2 | 5 | 5 | 6 | 6 |
| 74 | Beatrice | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 2 | 2 | 2 | 4 | 2 | 5 | 1 | 1 | 6 | 4 | 6 | 6 | 6 | 6 | 4 |
| 75 | Boneyaer | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 4 | 2 | 1 | 3 | 4 | 1 | 6 | 2 | 1 | 5 | 4 | 3 | 4 | 5 | 6 | 6 |
| 76 | Leniard | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 4 | 1 | 4 | 6 | 4 | 1 | 1 | 5 | 6 | 5 | 4 | 6 | 6 | 3 |
| 77 | Dennis | 10 to 14yrs | 10 to 14 yrs | 30 to 34yrs | 1 | 1 | 3 | 2 | 1 | 1 | 6 | 2 | 1 | 5 | 4 | 2 | 6 | 6 | 6 | 6 |
| 78 | Pete | 15 to 19yrs | 5 to 9 yrs | 45 to 49yrs | 1 | 1 | 1 | 3 | 4 | 4 | 3 | 3 | 1 | 5 | 5 | 5 | 6 | 6 | 6 | 5 |
| 79 | Simon | 20 yrs + | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 5 | 1 | 4 | 3 | 5 | 1 | 1 | 5 | 3 | 5 | 5 | 6 | 6 | 4 |
| 80 | Sadia | 15 to 19yrs | 20 yrs + | 45 to 49yrs | 1 | 2 | 2 | 2 | 5 | 5 | 3 | 2 | 1 | 5 | 2 | 6 | 5 | 6 | 6 | 6 |
| 81 | Maybin | 10 to 14yrs | 20 yrs + | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 2 | 2 | 3 | 1 | 5 | 4 | 5 | 6 | 6 | 6 | 6 |
| 82 | Marvin | 10 to 14yrs | 10 to 14 yrs | 50 to 54yrs | 1 | 1 | 3 | 1 | 4 | 3 | 5 | 3 | 1 | 4 | 6 | 5 | 6 | 6 | 6 | 6 |
| 83 | Sharpe | 20 yrs + | 20 yrs + | 55 to 59yrs | 1 | 1 | 2 | 1 | 4 | 3 | 4 | 1 | 1 | 5 | 4 | 5 | 4 | 6 | 6 | 6 |
| 84 | Kimonna | 15 to 19yrs | 0 to 4 yrs | 40 to 44yrs | 1 | 2 | 5 | 3 | 1 | 5 | 2 | 1 | 1 | 5 | 5 | 6 | 5 | 6 | 6 | 6 |
| 85 | Jenny | 5 to 9yrs | 5 to 9 yrs | 40 to 44yrs | 2 | 2 | 5 | 3 | 1 | 1 | 5 | 3 | 1 | 6 | 5 | 6 | 5 | 6 | 6 | 6 |
| 86 | Christopher | 20 yrs + | 20 yrs + | 55 to 59yrs | 1 | 1 | 4 | 3 | 4 | 4 | 5 | 1 | 1 | 5 | 3 | 4 | 5 | 6 | 6 | 3 |
| 87 | Godfridah | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 4 | 2 | 1 | 1 | 4 | 1 | 3 | 2 | 1 | 5 | 4 | 5 | 5 | 6 | 6 | 4 |
| 88 | Tisholeni | 15 to 19yrs | 0 to 4 yrs | 30 to 34yrs | 2 | 2 | 4 | 1 | 4 | 3 | 5 | 3 | 1 | 5 | 5 | 6 | 6 | 6 | 6 | 6 |
| 89 | Josef | 10 to 14yrs | 5 to 9 yrs | 50 to 54yrs | 3 | 1 | 2 | 1 | 4 | 6 | 6 | 1 | 1 | 5 | 6 | 4 | 5 | 6 | 6 | 6 |
| 90 | Kuyela | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 4 | 1 | 4 | 3 | 4 | 3 | 1 | 3 | 5 | 2 | 6 | 6 | 6 | 6 |
| 91 | Raheim | 15 to 19yrs | 10 to 14 yrs | 35 to 39yrs | 2 | 1 | 5 | 2 | 5 | 5 | 6 | 1 | 1 | 4 | 4 | 4 | 5 | 6 | 6 | 5 |
| 92 | Philips | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 5 | 1 | 4 | 3 | 4 | 1 | 1 | 4 | 3 | 6 | 6 | 6 | 6 | 6 |
| 93 | Dickson | 20 yrs + | 20 yrs + | 50 to 54yrs | 1 | 1 | 3 | 1 | 5 | 1 | 2 | 1 | 1 | 5 | 6 | 4 | 6 | 6 | 6 | 4 |
| 94 | Robertson | 10 to 14yrs | 0 to 4 yrs | 30 to 34yrs | 3 | 1 | 4 | 1 | 5 | 3 | 4 | 2 | 2 | 5 | 3 | 6 | 5 | 6 | 6 | 6 |

| Count | Q1F/name only | Q2 YATP | Q3 YECIAT (Yrs of CIAT membership) | Q4 Ageban | Q5MeDesi | Q6 Gender | Q7AAS | Q8 SOF -(Size of Firm) | Q9 PPT (Predominance of Project Type) | Q10 FaDiC1 | FaDiC2 | FaDiC3 | FaDiC4 | FaDiC5 | Q8 FaDiC2 | FaDiC6 | FaDiC7 | FaDiC8 | FaDiC9 | FaDiC3 |
|-------|---------------|-------------|--|-------------|----------|-----------|-------|---------------------------|---|------------|--------|--------|--------|--------|-----------|--------|--------|--------|--------|--------|
| 95 | Mohammed T | 20 yrs + | 10 to 14 yrs | 40 to 44yrs | 1 | 1 | 2 | 1 | 2 | 1 | 6 | 2 | 1 | 6 | 3 | 4 | 4 | 6 | 6 | 6 |
| 96 | Pete | 20 yrs + | 15 to 19 yrs | 60yrs+ | 1 | 1 | 4 | 1 | 2 | 3 | 3 | 1 | 1 | 6 | 6 | 2 | 5 | 6 | 6 | 6 |
| 97 | Jennifer | 10 to 14yrs | 5 to 9 yrs | 45 to 49yrs | 3 | 2 | 1 | 1 | 5 | 4 | 5 | 2 | 1 | 5 | 6 | 5 | 6 | 6 | 6 | 6 |
| 98 | Emily | 20 yrs + | 10 to 14 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 2 | 1 | 6 | 1 | 1 | 4 | 4 | 3 | 5 | 6 | 6 | 5 |
| 99 | Senjamie | 20 yrs + | 20 yrs + | 50 to 54yrs | 1 | 1 | 4 | 1 | 4 | 3 | 6 | 1 | 1 | 5 | 3 | 4 | 5 | 6 | 6 | 6 |
| 100 | Mitchel B | 5 to 9yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 2 | 1 | 1 | 5 | 5 | 5 | 2 | 1 | 4 | 1 | 3 | 5 | 6 | 6 | 6 |
| 101 | Georgina | 20 yrs + | 10 to 14 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 1 | 5 | 1 | 1 | 4 | 4 | 3 | 6 | 6 | 6 | 5 |
| 102 | Bancena | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 3 | 1 | 1 | 5 | 4 | 2 | 1 | 5 | 6 | 4 | 4 | 6 | 6 | 6 |
| 103 | Samatha | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 2 | 1 | 1 | 4 | 1 | 6 | 3 | 1 | 3 | 6 | 5 | 4 | 6 | 6 | 3 |
| 104 | Olapi | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 1 | 1 | 4 | 2 | 4 | 1 | 1 | 5 | 3 | 5 | 6 | 6 | 6 | 5 |
| 105 | enJay | 15 to 19yrs | 5 to 9 yrs | 45 to 49yrs | 1 | 1 | 4 | 1 | 4 | 2 | 3 | 2 | 1 | 4 | 4 | 4 | 6 | 6 | 6 | 6 |
| 106 | Christein | 20 yrs + | 10 to 14 yrs | 55 to 59yrs | 1 | 1 | 5 | 1 | 4 | 1 | 6 | 3 | 1 | 5 | 5 | 6 | 2 | 6 | 6 | 6 |
| 107 | Mica | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 2 | 3 | 1 | 4 | 1 | 5 | 3 | 1 | 4 | 2 | 6 | 5 | 6 | 6 | 6 |
| 108 | Salem | 10 to 14yrs | 10 to 14 yrs | 35 to 39yrs | 3 | 2 | 3 | 1 | 4 | 2 | 3 | 2 | 1 | 6 | 5 | 6 | 5 | 6 | 6 | 6 |
| 109 | Josephine | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 1 | 5 | 3 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 3 |
| 110 | Andrew B | 15 to 19yrs | 5 to 9 yrs | 40 to 44yrs | 1 | 1 | 4 | 1 | 4 | 6 | 4 | 1 | 1 | 6 | 5 | 2 | 3 | 6 | 6 | 6 |
| 111 | Evans | 10 to 14yrs | 20 yrs + | 50 to 54yrs | 2 | 1 | 2 | 1 | 5 | 5 | 5 | 3 | 1 | 5 | 4 | 4 | 6 | 6 | 6 | 4 |
| 112 | Olivia F | 5 to 9yrs | 5 to 9 yrs | 25 to 29yrs | 2 | 2 | 1 | 1 | 4 | 1 | 3 | 3 | 1 | 4 | 6 | 4 | 5 | 6 | 6 | 6 |
| 113 | Timothy | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 4 | 3 | 1 | 4 | 4 | 3 | 6 | 6 | 6 | 3 |
| 114 | Angela | 10 to 14yrs | 15 to 19 yrs | 45 to 49yrs | 3 | 2 | 3 | 1 | 2 | 2 | 5 | 2 | 1 | 5 | 6 | 5 | 6 | 6 | 6 | 5 |
| 115 | Euphraim | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 1 | 2 | 1 | 4 | 2 | 5 | 1 | 1 | 4 | 4 | 6 | 5 | 5 | 5 | 5 |
| 116 | Harvey | 5 to 9yrs | 15 to 19 yrs | 50 to 54yrs | 1 | 1 | 2 | 1 | 5 | 5 | 6 | 3 | 1 | 5 | 2 | 4 | 5 | 6 | 6 | 6 |
| 117 | Jorren | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 3 | 3 | 2 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 4 |
| 118 | William | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 5 | 1 | 2 | 1 | 6 | 3 | 2 | 5 | 5 | 4 | 5 | 5 | 6 | 3 |
| 119 | Priscilla | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 1 | 1 | 4 | 2 | 4 | 1 | 1 | 3 | 4 | 6 | 6 | 6 | 6 | 6 |
| 120 | Nathan | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 3 | 3 | 2 | 1 | 6 | 3 | 3 | 4 | 6 | 6 | 4 |
| 121 | Jeancy | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 5 | 4 | 3 | 2 | 6 | 5 | 5 |
| 122 | Campbell | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 5 | 1 | 2 | 1 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 123 | Ahmed | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 1 | 4 | 1 | 4 | 4 | 4 | 2 | 1 | 5 | 3 | 3 | 6 | 6 | 6 | 3 |
| 124 | Jean | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 2 | 5 | 1 | 2 | 1 | 4 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 6 |
| 125 | Angeline | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 2 | 1 | 4 | 2 | 4 | 1 | 1 | 3 | 4 | 6 | 4 | 6 | 6 | 6 |
| 126 | Charles | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 5 | 4 | 3 | 2 | 6 | 6 | 6 |
| 127 | Patricia | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 1 | 1 | 4 | 2 | 4 | 1 | 1 | 5 | 4 | 6 | 4 | 6 | 6 | 6 |
| 128 | Martin | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 5 | 1 | 2 | 5 | 6 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 129 | Emelia | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 1 | 1 | 4 | 3 | 5 | 1 | 1 | 4 | 4 | 6 | 6 | 6 | 6 | 6 |
| 130 | Felix | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 5 | 1 | 2 | 1 | 6 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 131 | Julieta | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 2 | 4 | 1 | 4 | 4 | 4 | 2 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 5 |
| 132 | Paul | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 4 | 4 | 3 | 5 | 6 | 6 | 6 |
| 133 | Levy | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 5 | 1 | 3 | 3 | 4 | 3 | 1 | 6 | 5 | 4 | 5 | 5 | 5 | 6 |
| 134 | Murray | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 1 | 1 | 4 | 2 | 5 | 1 | 1 | 4 | 4 | 6 | 6 | 6 | 6 | 5 |
| 135 | Ethel | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 2 | 5 | 1 | 3 | 1 | 4 | 2 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 6 |
| 136 | Herbert | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 5 | 4 | 3 | 2 | 6 | 6 | 3 |
| 137 | William | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 5 | 1 | 2 | 1 | 4 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 5 | 3 |
| 138 | Jeffrey | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 1 | 4 | 1 | 4 | 5 | 5 | 1 | 1 | 5 | 3 | 3 | 6 | 6 | 6 | 6 |
| 139 | Jean | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 2 | 3 | 1 | 2 | 1 | 5 | 3 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 3 |
| 140 | Wilson | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 6 | 4 | 3 | 2 | 6 | 6 | 4 |

| Count | Q1F/name only | Q2 YATP | Q3 YECIAT (Yrs of CIAT membership) | Q4 Ageban | Q5MeDesi | Q6 Gender | Q7AAS | Q8 SOF -(Size of Firm) | Q9 PPT (Predominance of Project Type) | Q10 FaDiC1 | FaDiC2 | FaDiC3 | FaDiC4 | FaDiC5 | Q8 FaDiC2 | FaDiC6 | FaDiC7 | FaDiC8 | FaDiC9 | FaDiC3 |
|-------|---------------|-------------|--|-------------|----------|-----------|-------|---------------------------|---|------------|--------|--------|--------|--------|-----------|--------|--------|--------|--------|--------|
| 141 | Sarafina | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 3 | 1 | 3 | 5 | 4 | 5 | 6 | 6 | 6 |
| 142 | Joyceline | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 2 | 1 | 4 | 2 | 6 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 4 |
| 143 | Tonny | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 2 | 5 | 5 | 2 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 6 |
| 144 | Japhet | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 2 | 4 | 3 | 2 | 6 | 6 | 6 |
| 145 | Paul | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 3 | 1 | 5 | 4 | 3 | 2 | 6 | 6 | 5 |
| 146 | Levy | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 2 | 1 | 6 | 3 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 6 |
| 147 | Jasminey | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 4 | 4 | 2 | 1 | 5 | 3 | 3 | 6 | 6 | 6 | 6 |
| 148 | Leonardo | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 3 | 1 | 1 | 5 | 4 | 3 | 2 | 6 | 6 | 6 |
| 149 | Robinson | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 4 | 4 | 3 | 2 | 6 | 6 | 4 |
| 150 | Williamson | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 1 | 1 | 2 | 3 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 5 |
| 151 | Rhoida | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 2 | 1 | 1 | 4 | 2 | 3 | 1 | 1 | 3 | 4 | 6 | 4 | 5 | 6 | 6 |
| 152 | Prudence | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 2 | 3 | 1 | 2 | 3 | 4 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 153 | John | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 6 | 2 | 1 | 5 | 4 | 3 | 2 | 6 | 6 | 6 |
| 154 | Dec | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 1 | 1 | 2 | 1 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 5 | 3 |
| 155 | Tricia | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 1 | 1 | 4 | 2 | 3 | 1 | 1 | 5 | 4 | 6 | 4 | 6 | 6 | 6 |
| 156 | Ben | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 4 | 1 | 3 | 1 | 4 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 157 | Jonathan | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 3 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 2 | 4 | 3 | 2 | 6 | 6 | 3 |
| 158 | Jacob | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 1 | 4 | 1 | 4 | 1 | 6 | 2 | 2 | 3 | 6 | 6 | 4 | 6 | 5 | 5 |
| 159 | William | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 1 | 1 | 2 | 4 | 6 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 160 | Pickford | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 2 | 1 | 4 | 2 | 5 | 1 | 1 | 5 | 4 | 6 | 3 | 6 | 5 | 4 |
| 161 | Bradley | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 3 | 1 | 4 | 1 | 4 | 6 | 5 | 3 | 1 | 6 | 4 | 3 | 2 | 6 | 6 | 6 |
| 162 | Jimmy | 15 to 19yrs | 5 to 9 yrs | 40 to 44yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 5 | 5 | 2 | 5 | 6 | 6 | 6 |
| 163 | Adam | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 2 | 5 | 6 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 4 |
| 164 | Jordan C | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 1 | 4 | 1 | 4 | 3 | 6 | 3 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 6 |
| 165 | Paul | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 3 | 1 | 4 | 4 | 3 | 2 | 6 | 6 | 6 |
| 166 | Penfold | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 1 | 1 | 4 | 2 | 6 | 1 | 1 | 5 | 4 | 6 | 5 | 6 | 6 | 4 |
| 167 | Campbell | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 5 | 1 | 2 | 1 | 2 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 5 |
| 168 | George | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 6 | 5 | 1 | 5 | 4 | 5 | 6 | 6 | 6 | 6 |
| 169 | Jean | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 2 | 4 | 1 | 2 | 1 | 4 | 3 | 1 | 3 | 5 | 4 | 5 | 6 | 6 | 5 |
| 170 | Joy | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 2 | 4 | 1 | 4 | 5 | 2 | 3 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 6 |
| 171 | Pacimol | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 5 | 4 | 3 | 2 | 6 | 6 | 6 |
| 172 | Carla | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 4 | 2 | 1 | 1 | 4 | 2 | 5 | 1 | 1 | 4 | 4 | 6 | 6 | 6 | 6 | 4 |
| 173 | Banfield | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 3 | 1 | 3 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 6 |
| 174 | Harry | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 6 | 3 | 1 | 4 | 4 | 3 | 5 | 6 | 6 | 5 |
| 175 | Levy | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 2 | 1 | 2 | 3 | 6 | 2 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 6 |
| 176 | Hannah | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 1 | 1 | 4 | 2 | 5 | 1 | 1 | 3 | 6 | 6 | 4 | 6 | 5 | 6 |
| 177 | Appleton | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 2 | 1 | 2 | 4 | 3 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 178 | Jammie | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 1 | 1 | 4 | 2 | 5 | 1 | 1 | 6 | 4 | 6 | 5 | 6 | 6 | 6 |
| 179 | Joyeya | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 2 | 4 | 1 | 4 | 1 | 5 | 3 | 1 | 5 | 6 | 3 | 4 | 6 | 6 | 5 |
| 180 | Charles | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 3 | 1 | 2 | 3 | 6 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 5 |
| 181 | Sylvia | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 1 | 1 | 4 | 2 | 1 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 6 |
| 182 | Wellington | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 3 | 4 | 3 | 6 | 6 | 6 | 5 |
| 183 | Rianne | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 4 | 2 | 1 | 1 | 4 | 2 | 4 | 1 | 1 | 5 | 4 | 6 | 5 | 6 | 6 | 6 |
| 184 | Levy | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 3 | 5 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 5 |
| 185 | Oliver | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 2 | 1 | 4 | 3 | 6 | 1 | 1 | 5 | 6 | 6 | 4 | 6 | 6 | 5 |
| 186 | Stephen | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 6 | 4 | 3 | 6 | 6 | 6 | 3 |
| 187 | Jasmin | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 2 | 4 | 1 | 4 | 4 | 4 | 1 | 1 | 4 | 3 | 3 | 4 | 6 | 6 | 5 |

| Count | Q1F/name only | Q2 YATP | Q3 YECIAT (Yrs of CIAT membership) | Q4 Ageban | Q5MeDesi | Q6 Gender | Q7AAS | Q8 SOF -(Size of Firm) | Q9 PPT (Predominance of Project Type) | Q10 FaDiC1 | FaDiC2 | FaDiC3 | FaDiC4 | FaDiC5 | Q8 FaDiC2 | FaDiC6 | FaDiC7 | FaDiC8 | FaDiC9 | FaDiC3 |
|-------|---------------|-------------|--|-------------|----------|-----------|-------|---------------------------|---|------------|--------|--------|--------|--------|-----------|--------|--------|--------|--------|--------|
| 188 | Campbell | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 5 | 1 | 4 | 1 | 4 | 6 | 5 | 3 | 1 | 6 | 4 | 3 | 2 | 6 | 6 | 6 |
| 189 | Adam | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 3 | 1 | 2 | 1 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 190 | Louise | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 2 | 2 | 1 | 4 | 2 | 4 | 1 | 1 | 2 | 4 | 6 | 4 | 6 | 6 | 5 |
| 191 | Anthony | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 4 | 1 | 2 | 1 | 2 | 5 | 2 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 4 |
| 192 | Jeffrey | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 1 | 1 | 4 | 2 | 5 | 1 | 1 | 6 | 6 | 6 | 5 | 6 | 6 | 5 |
| 193 | Jessy | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 1 | 4 | 1 | 1 | 5 | 3 | 3 | 4 | 6 | 6 | 6 |
| 194 | Bill | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 6 | 4 | 3 | 6 | 6 | 6 | 4 |
| 195 | Trish | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 2 | 2 | 1 | 4 | 2 | 6 | 1 | 1 | 5 | 4 | 6 | 4 | 6 | 6 | 5 |
| 196 | Lemmy | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 1 | 1 | 2 | 5 | 3 | 3 | 1 | 6 | 6 | 4 | 5 | 6 | 6 | 5 |
| 197 | Jimmy | 15 to 19yrs | 5 to 9 yrs | 40 to 44yrs | 3 | 1 | 4 | 1 | 4 | 6 | 5 | 1 | 1 | 4 | 5 | 2 | 4 | 6 | 6 | 3 |
| 198 | Katie | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 2 | 1 | 4 | 3 | 4 | 1 | 1 | 6 | 4 | 6 | 4 | 6 | 5 | 5 |
| 199 | Barlet | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 2 | 1 | 6 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 6 |
| 200 | Hendrix | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 1 | 4 | 1 | 4 | 1 | 3 | 2 | 1 | 5 | 6 | 3 | 4 | 6 | 6 | 3 |
| 201 | Campbell | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 4 | 1 | 4 | 1 | 4 | 6 | 5 | 3 | 1 | 6 | 4 | 3 | 2 | 6 | 4 | 5 |
| 202 | Jayame | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 2 | 4 | 1 | 4 | 4 | 4 | 2 | 1 | 4 | 3 | 3 | 4 | 6 | 6 | 5 |
| 203 | Nicola | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 4 | 2 | 2 | 1 | 4 | 2 | 3 | 1 | 1 | 5 | 4 | 6 | 5 | 6 | 6 | 3 |
| 204 | Davinnah | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 1 | 2 | 4 | 5 | 3 | 1 | 1 | 3 | 4 | 5 | 4 | 6 | 4 | 5 |
| 205 | Garry | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 2 | 2 | 5 | 6 | 2 | 1 | 6 | 5 | 4 | 5 | 6 | 6 | 6 |
| 206 | Stewart | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 3 | 1 | 4 | 2 | 4 | 3 | 5 | 2 | 1 | 5 | 6 | 3 | 5 | 6 | 6 | 4 |
| 207 | Kathylene | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 2 | 1 | 1 | 4 | 2 | 4 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 5 | 6 |
| 208 | Margarette | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 2 | 1 | 1 | 4 | 2 | 5 | 1 | 1 | 5 | 4 | 6 | 5 | 6 | 5 | 5 |
| 209 | Jesy | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 1 | 4 | 1 | 4 | 5 | 2 | 2 | 1 | 5 | 3 | 4 | 5 | 6 | 6 | 5 |
| 210 | Jack | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 2 | 3 | 3 | 5 | 3 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 4 |
| 211 | Mervin | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 2 | 1 | 4 | 2 | 6 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 6 |
| 212 | Adam | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 1 | 1 | 2 | 5 | 5 | 3 | 1 | 5 | 5 | 5 | 5 | 6 | 6 | 5 |
| 213 | Stefan | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 1 | 1 | 2 | 4 | 2 | 4 | 1 | 1 | 4 | 4 | 6 | 4 | 6 | 6 | 6 |
| 214 | Max | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 1 | 1 | 2 | 1 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 6 | 5 |
| 215 | Jassida | 5 to 9yrs | 5 to 9 yrs | 35 to 39yrs | 2 | 1 | 4 | 1 | 4 | 6 | 3 | 2 | 1 | 4 | 3 | 3 | 4 | 6 | 6 | 3 |
| 216 | Mapela | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 1 | 2 | 4 | 2 | 5 | 1 | 1 | 5 | 4 | 4 | 5 | 6 | 5 | 4 |
| 217 | Yaluma | 10 to 14yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 1 | 1 | 1 | 4 | 4 | 2 | 1 | 1 | 4 | 4 | 6 | 2 | 6 | 6 | 3 |
| 218 | Posson | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 2 | 1 | 1 | 1 | 4 | 2 | 3 | 1 | 1 | 5 | 4 | 6 | 5 | 6 | 5 | 5 |
| 219 | Jermine | 15 to 19yrs | 5 to 9 yrs | 35 to 39yrs | 1 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 5 | 6 | 3 | 4 | 6 | 6 | 5 |
| 220 | Hamza | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 3 | 1 | 3 | 2 | 3 | 1 | 5 | 2 | 1 | 4 | 5 | 4 | 5 | 6 | 5 | 6 |
| 221 | Jef | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 1 | 1 | 2 | 1 | 4 | 3 | 3 | 1 | 1 | 3 | 4 | 3 | 4 | 6 | 6 | 3 |
| 222 | Bobby | 10 to 14yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 2 | 1 | 4 | 5 | 4 | 2 | 1 | 4 | 4 | 6 | 4 | 6 | 5 | 3 |
| 223 | Goerge | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 1 | 1 | 2 | 2 | 2 | 1 | 3 | 2 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 3 |
| 224 | Seal | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 5 | 2 | 1 | 4 | 4 | 3 | 2 | 6 | 3 | 3 |
| 225 | Liam | 0 to 4yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 2 | 1 | 4 | 2 | 6 | 2 | 2 | 4 | 4 | 2 | 4 | 6 | 6 | 5 |
| 226 | Jones | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 2 | 3 | 4 | 3 | 1 | 4 | 5 | 4 | 5 | 6 | 5 | 5 |
| 227 | Pedro | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 2 | 2 | 3 | 5 | 2 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 3 |
| 228 | Theobald | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 1 | 1 | 4 | 2 | 4 | 6 | 3 | 2 | 2 | 5 | 4 | 3 | 3 | 6 | 5 | 6 |
| 229 | Ash | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 2 | 1 | 3 | 1 | 5 | 2 | 1 | 5 | 5 | 4 | 5 | 6 | 6 | 4 |
| 230 | Doninke | 10 to 14yrs | 0 to 4 yrs | 25 to 29yrs | 3 | 1 | 2 | 1 | 4 | 1 | 4 | 1 | 1 | 3 | 4 | 6 | 3 | 6 | 6 | 6 |
| 231 | Jonathan | 15 to 19yrs | 15 to 19 yrs | 55 to 59yrs | 1 | 1 | 4 | 2 | 4 | 6 | 5 | 2 | 1 | 5 | 5 | 3 | 5 | 6 | 6 | 4 |
| 232 | Connor | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 3 | 1 | 2 | 4 | 6 | 1 | 2 | 4 | 5 | 4 | 6 | 6 | 5 | 5 |
| 233 | Tom | 15 to 19yrs | 5 to 9 yrs | 55 to 59yrs | 2 | 1 | 4 | 1 | 4 | 6 | 1 | 3 | 1 | 5 | 4 | 3 | 4 | 6 | 6 | 4 |
| 234 | Hussain | 10 to 14yrs | 5 to 9 yrs | 30 to 34yrs | 2 | 1 | 1 | 1 | 2 | 6 | 6 | 3 | 1 | 5 | 5 | 4 | 2 | 6 | 6 | 5 |

| Count | Q1F/name only | Q11 VaDiC1 | VaDiC2 | VaDiC3 | VaDiC4 | VaDiC5 | VaDiC6 | VaDiC7 | VaDiC8 | VaDiC9 | VaDiC10 | VaDiC11 | VaDiC12 | Q12 Exfacirc1 | Exfacirc2 | Exfacirc3 | Exfacirc4 | Exfacirc5 | Exfacirc6 | Exfacirc7 | Exfacirc8 |
|-------|---------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 | George | 5 | 4 | 3 | 4 | 5 | 3 | 4 | 1 | 5 | 4 | 3 | 1 | 5 | 3 | 3 | 3 | 4 | 5 | 3 | 1 |
| 2 | Emmanuel | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 3 | 1 | 5 | 1 | 5 | 5 | 5 | 5 | 5 | 4 | 1 | 4 | 3 |
| 3 | Andy | 5 | 5 | 4 | 4 | 5 | 4 | 3 | 1 | 5 | 5 | 2 | 4 | 5 | 3 | 4 | 4 | 5 | 5 | 4 | 1 |
| 4 | James | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 5 | 5 | 4 | 5 | 5 | 4 |
| 5 | Steve | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 1 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 1 |
| 6 | Peter | 5 | 4 | 5 | 4 | 5 | 2 | 4 | 3 | 4 | 5 | 2 | 2 | 5 | 5 | 4 | 2 | 4 | 4 | 3 | 3 |
| 7 | Arthur | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 1 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 1 |
| 8 | Catherine | 5 | 4 | 5 | 3 | 5 | 4 | 5 | 4 | 4 | 5 | 3 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 |
| 9 | Olami | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 2 | 3 | 5 | 4 | 3 | 5 | 5 | 4 | 5 | 5 | 3 | 4 | 2 |
| 10 | John | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 1 | 4 | 4 | 3 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 1 |
| 11 | Pete | 4 | 3 | 5 | 3 | 5 | 5 | 4 | 2 | 4 | 5 | 3 | 2 | 5 | 4 | 5 | 5 | 3 | 4 | 5 | 2 |
| 12 | Rakhman | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 2 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 |
| 13 | Andrew | 5 | 3 | 4 | 3 | 5 | 3 | 5 | 2 | 5 | 3 | 3 | 3 | 5 | 5 | 5 | 3 | 3 | 5 | 4 | 2 |
| 14 | Webster | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 3 | 3 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 |
| 15 | Justine | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 1 | 4 | 4 | 1 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 1 |
| 16 | Theresa | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 3 | 1 | 5 | 3 | 3 | 5 | 5 | 4 | 5 | 5 | 1 | 5 | 3 |
| 17 | Patel | 5 | 4 | 4 | 3 | 5 | 5 | 4 | 3 | 5 | 5 | 3 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 3 |
| 18 | Simon | 5 | 5 | 4 | 4 | 5 | 5 | 3 | 2 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 2 |
| 19 | Abdul | 5 | 4 | 5 | 3 | 5 | 5 | 4 | 3 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 |
| 20 | Scot | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 3 | 5 | 5 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 3 |
| 21 | Radcliffe | 5 | 5 | 4 | 3 | 5 | 5 | 4 | 2 | 4 | 4 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 2 |
| 22 | Anderson | 4 | 4 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 3 | 3 |
| 23 | Kim | 5 | 3 | 4 | 4 | 5 | 5 | 2 | 2 | 5 | 5 | 4 | 3 | 5 | 5 | 4 | 5 | 3 | 5 | 4 | 2 |
| 24 | Jenny | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 3 |
| 25 | Provin | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 1 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 4 |
| 26 | Edward | 5 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 5 | 2 | 3 | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 3 | 3 |
| 27 | Lee | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 2 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 |
| 28 | Rachael | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 4 | 4 | 4 | 3 | 5 | 5 | 3 | 4 | 4 | 4 | 5 | 3 |
| 29 | Andre | 4 | 4 | 4 | 4 | 5 | 5 | 3 | 5 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 |
| 30 | Gallimore | 5 | 4 | 5 | 5 | 5 | 3 | 3 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 4 | 4 | 5 | 4 |
| 31 | Amoah | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 3 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 3 |
| 32 | Michale | 5 | 3 | 5 | 4 | 5 | 5 | 4 | 3 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 3 | 4 | 5 | 3 |
| 33 | Bonner | 5 | 4 | 4 | 3 | 5 | 5 | 4 | 2 | 5 | 3 | 3 | 3 | 5 | 5 | 3 | 5 | 4 | 5 | 4 | 2 |
| 34 | Ahmed | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 3 |
| 35 | Mathews | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 1 | 5 | 4 | 4 | 2 | 5 | 5 | 5 | 3 | 5 | 5 | 5 | 1 |
| 36 | Benjamin | 5 | 5 | 3 | 3 | 5 | 2 | 4 | 3 | 5 | 4 | 4 | 3 | 5 | 5 | 5 | 2 | 5 | 5 | 3 | 3 |
| 37 | Elton | 4 | 4 | 4 | 2 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 |
| 38 | Jai | 5 | 3 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 4 | 5 | 4 |
| 39 | Rob | 4 | 5 | 4 | 4 | 5 | 4 | 1 | 1 | 3 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 3 | 4 | 1 |
| 40 | Lengeni | 5 | 4 | 4 | 5 | 5 | 2 | 4 | 1 | 5 | 5 | 3 | 2 | 5 | 5 | 5 | 2 | 4 | 5 | 4 | 1 |
| 41 | David | 4 | 4 | 5 | 5 | 5 | 3 | 5 | 3 | 4 | 4 | 4 | 3 | 5 | 4 | 5 | 3 | 4 | 4 | 5 | 3 |
| 42 | Rosemary | 5 | 5 | 4 | 4 | 5 | 1 | 4 | 1 | 5 | 5 | 4 | 3 | 5 | 5 | 4 | 1 | 5 | 5 | 4 | 1 |
| 43 | Lilly | 5 | 4 | 4 | 3 | 5 | 4 | 5 | 4 | 4 | 4 | 3 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 |
| 44 | Rastam | 5 | 5 | 4 | 4 | 5 | 2 | 5 | 2 | 4 | 5 | 2 | 3 | 5 | 5 | 4 | 2 | 5 | 4 | 4 | 2 |
| 45 | Mohammed | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 2 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 2 |
| 46 | Heywood | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 |
| 47 | Julian | 4 | 2 | 4 | 5 | 5 | 5 | 5 | 1 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 2 | 4 | 4 | 1 |

| Count | Q1F/name only | Q11 VaDiC1 | VaDiC2 | VaDiC3 | VaDiC4 | VaDiC5 | VaDiC6 | VaDiC7 | VaDiC8 | VaDiC9 | VaDiC10 | VaDiC11 | VaDiC12 | Q12 Exfacirc1 | Exfacirc2 | Exfacirc3 | Exfacirc4 | Exfacirc5 | Exfacirc6 | Exfacirc7 | Exfacirc8 |
|-------|---------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 48 | Tansey | 4 | 5 | 3 | 3 | 5 | 3 | 4 | 4 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 | 5 | 5 | 3 | 4 |
| 49 | Leonard | 4 | 4 | 4 | 1 | 5 | 5 | 4 | 2 | 3 | 4 | 3 | 5 | 5 | 4 | 5 | 5 | 4 | 3 | 4 | 2 |
| 50 | Omino | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 4 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 |
| 51 | Samatha | 5 | 4 | 5 | 3 | 5 | 4 | 4 | 5 | 5 | 4 | 3 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 |
| 52 | Ousama | 4 | 3 | 5 | 3 | 5 | 4 | 5 | 2 | 4 | 3 | 4 | 4 | 5 | 4 | 5 | 4 | 3 | 4 | 5 | 2 |
| 53 | Charlotte | 4 | 4 | 5 | 4 | 5 | 1 | 1 | 2 | 5 | 3 | 4 | 5 | 5 | 4 | 4 | 1 | 4 | 5 | 5 | 2 |
| 54 | Mark | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 |
| 55 | Ayoola | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 5 | 2 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 3 |
| 56 | Musama | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 2 | 4 | 4 | 4 | 5 | 5 | 5 | 3 | 5 | 4 | 4 | 4 | 2 |
| 57 | Sean | 5 | 3 | 5 | 5 | 5 | 1 | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 5 | 5 | 1 | 3 | 5 | 5 | 5 |
| 58 | Chris | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 |
| 59 | Tshole | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 |
| 60 | Luke | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 2 | 2 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 2 | 4 | 2 |
| 61 | Olivia | 5 | 5 | 4 | 5 | 5 | 1 | 4 | 2 | 4 | 5 | 4 | 2 | 5 | 5 | 5 | 1 | 5 | 4 | 4 | 2 |
| 62 | Lamont | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 |
| 63 | Brandina | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 2 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 2 |
| 64 | Abass | 5 | 3 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 3 | 4 | 3 | 5 | 5 | 3 | 5 | 3 | 5 | 5 | 5 |
| 65 | Anabella | 4 | 5 | 4 | 4 | 5 | 3 | 4 | 2 | 4 | 3 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 2 |
| 66 | Edgar | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 4 | 3 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 3 |
| 67 | Anvil | 5 | 4 | 4 | 4 | 5 | 1 | 5 | 3 | 4 | 3 | 4 | 3 | 5 | 5 | 4 | 1 | 5 | 4 | 4 | 3 |
| 68 | Juliana | 4 | 4 | 5 | 5 | 5 | 3 | 5 | 1 | 5 | 5 | 4 | 3 | 5 | 5 | 5 | 3 | 4 | 5 | 5 | 1 |
| 69 | Mitchel | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 1 | 4 | 4 | 3 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 1 |
| 70 | Galloria | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 4 | 3 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 3 |
| 71 | Mulenja | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 2 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 2 |
| 72 | Naomi | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 |
| 73 | Michael | 4 | 5 | 4 | 4 | 4 | 2 | 5 | 1 | 3 | 5 | 2 | 5 | 4 | 4 | 4 | 2 | 5 | 3 | 4 | 1 |
| 74 | Beatrice | 4 | 5 | 5 | 4 | 5 | 4 | 1 | 4 | 3 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 3 | 4 |
| 75 | Boneyaer | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 2 | 5 | 4 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 2 |
| 76 | Leniard | 5 | 4 | 3 | 5 | 5 | 4 | 5 | 1 | 3 | 4 | 3 | 3 | 5 | 5 | 5 | 4 | 4 | 3 | 3 | 1 |
| 77 | Dennis | 5 | 5 | 5 | 5 | 5 | 2 | 4 | 4 | 4 | 5 | 2 | 5 | 5 | 5 | 5 | 2 | 5 | 4 | 5 | 4 |
| 78 | Pete | 5 | 5 | 5 | 3 | 5 | 4 | 1 | 2 | 5 | 4 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 5 | 2 |
| 79 | Simon | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 3 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 3 | 4 | 4 |
| 80 | Sadia | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 5 |
| 81 | Maybin | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 3 | 5 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 4 |
| 82 | Marvin | 4 | 5 | 4 | 4 | 5 | 4 | 3 | 2 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 2 |
| 83 | Sharpe | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 |
| 84 | Kimonna | 4 | 5 | 4 | 5 | 5 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 3 | 4 | 4 |
| 85 | Jenny | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 2 | 5 | 5 | 4 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 |
| 86 | Christopher | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 2 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 2 | 5 | 3 |
| 87 | Godfridah | 5 | 5 | 4 | 3 | 5 | 5 | 4 | 4 | 3 | 4 | 3 | 5 | 5 | 5 | 3 | 5 | 5 | 3 | 4 | 4 |
| 88 | Tisholeni | 5 | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 4 | 4 | 4 | 3 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 |
| 89 | Josef | 5 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 1 |
| 90 | Kuyela | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 3 | 4 | 5 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 3 |
| 91 | Raheim | 5 | 4 | 5 | 4 | 5 | 3 | 4 | 4 | 5 | 3 | 4 | 3 | 5 | 5 | 4 | 3 | 4 | 5 | 5 | 4 |
| 92 | Phillips | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 |
| 93 | Dickson | 4 | 5 | 4 | 5 | 5 | 3 | 5 | 3 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 3 | 4 | 3 |
| 94 | Robertson | 5 | 5 | 4 | 3 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 4 | 4 |

| Count | Q1F/name only | Q11 VaDiC1 | VaDiC2 | VaDiC3 | VaDiC4 | VaDiC5 | VaDiC6 | VaDiC7 | VaDiC8 | VaDiC9 | VaDiC10 | VaDiC11 | VaDiC12 | Q12 Exfacirc1 | Exfacirc2 | Exfacirc3 | Exfacirc4 | Exfacirc5 | Exfacirc6 | Exfacirc7 | Exfacirc8 |
|-------|---------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 95 | Mohammed T | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 |
| 96 | Pete | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 |
| 97 | Jennifer | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 4 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 3 |
| 98 | Emily | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 3 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 |
| 99 | Senjamie | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 3 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 3 |
| 100 | Mitchel B | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 3 | 3 | 3 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 5 |
| 101 | Georgina | 5 | 4 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 3 | 4 |
| 102 | Bancena | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 2 | 4 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 2 |
| 103 | Samatha | 4 | 5 | 3 | 5 | 5 | 3 | 5 | 5 | 5 | 3 | 3 | 3 | 5 | 4 | 5 | 3 | 5 | 5 | 3 | 5 |
| 104 | Olapi | 5 | 5 | 3 | 5 | 5 | 5 | 1 | 5 | 4 | 4 | 3 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 5 |
| 105 | enJay | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 2 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 2 |
| 106 | Christein | 2 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 2 | 5 | 3 | 5 | 5 | 5 | 5 |
| 107 | Mica | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 |
| 108 | Salem | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 2 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 2 |
| 109 | Josephine | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 |
| 110 | Andrew B | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 1 | 3 | 3 | 5 | 3 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 1 |
| 111 | Evans | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 2 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 2 |
| 112 | Olivia F | 5 | 4 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 4 | 5 | 4 | 5 |
| 113 | Timothy | 4 | 3 | 3 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 3 | 4 | 5 | 5 | 4 | 4 | 3 | 5 | 5 | 4 |
| 114 | Angela | 5 | 4 | 5 | 3 | 5 | 4 | 4 | 1 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 3 |
| 115 | Euphraim | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 3 | 5 | 5 | 3 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 4 |
| 116 | Harvey | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 3 | 2 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 2 | 5 | 3 |
| 117 | Jorren | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 3 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 |
| 118 | William | 5 | 4 | 3 | 3 | 5 | 3 | 5 | 2 | 5 | 3 | 5 | 5 | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 2 |
| 119 | Priscilla | 5 | 4 | 4 | 4 | 5 | 5 | 3 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 |
| 120 | Nathan | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 3 | 2 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 2 | 4 | 3 |
| 121 | Jeancy | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 3 | 4 | 3 | 4 | 5 | 4 | 5 | 5 | 4 | 3 | 5 | 4 |
| 122 | Campbell | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 2 | 1 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 1 | 4 | 2 |
| 123 | Ahmed | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 3 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 |
| 124 | Jean | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 3 | 2 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 2 | 4 | 3 |
| 125 | Angeline | 5 | 5 | 5 | 3 | 5 | 5 | 2 | 1 | 4 | 5 | 5 | 3 | 5 | 5 | 3 | 5 | 5 | 4 | 5 | 1 |
| 126 | Charles | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 2 | 4 | 3 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 3 |
| 127 | Patricia | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 4 | 5 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 |
| 128 | Martin | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 3 | 3 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 3 | 5 | 3 |
| 129 | Emelia | 5 | 3 | 4 | 5 | 5 | 4 | 3 | 5 | 5 | 3 | 4 | 3 | 5 | 5 | 5 | 4 | 3 | 5 | 5 | 5 |
| 130 | Felix | 5 | 4 | 5 | 4 | 5 | 5 | 3 | 2 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 3 |
| 131 | Julieta | 5 | 5 | 5 | 3 | 4 | 4 | 2 | 4 | 4 | 3 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 |
| 132 | Paul | 5 | 4 | 4 | 4 | 5 | 3 | 3 | 2 | 4 | 4 | 5 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 2 |
| 133 | Levy | 5 | 5 | 4 | 4 | 5 | 4 | 3 | 5 | 1 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 1 | 5 | 5 |
| 134 | Murray | 4 | 4 | 5 | 5 | 5 | 5 | 1 | 3 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 3 |
| 135 | Ethel | 5 | 4 | 5 | 5 | 5 | 4 | 3 | 4 | 4 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 |
| 136 | Herbert | 4 | 4 | 5 | 5 | 5 | 4 | 3 | 3 | 5 | 4 | 3 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 3 |
| 137 | William | 5 | 5 | 5 | 4 | 5 | 3 | 4 | 3 | 1 | 3 | 4 | 5 | 5 | 5 | 4 | 3 | 5 | 1 | 5 | 3 |
| 138 | Jeffrey | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 |
| 139 | Jean | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 2 | 5 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 2 |
| 140 | Wilson | 5 | 2 | 5 | 4 | 5 | 4 | 3 | 2 | 4 | 2 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 2 |

| Count | Q1F/name only | Q11 VaDiC1 | VaDiC2 | VaDiC3 | VaDiC4 | VaDiC5 | VaDiC6 | VaDiC7 | VaDiC8 | VaDiC9 | VaDiC10 | VaDiC11 | VaDiC12 | Q12 Exfacirc1 | Exfacirc2 | Exfacirc3 | Exfacirc4 | Exfacirc5 | Exfacirc6 | Exfacirc7 | Exfacirc8 |
|-------|---------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 141 | Sarafina | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 1 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 1 | 5 | 4 |
| 142 | Joyceline | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 3 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 3 |
| 143 | Tonny | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 |
| 144 | Japhet | 4 | 5 | 4 | 2 | 5 | 3 | 1 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 2 | 3 | 5 | 5 | 4 | 4 |
| 145 | Paul | 5 | 4 | 5 | 5 | 5 | 5 | 3 | 4 | 3 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 4 |
| 146 | Levy | 5 | 5 | 5 | 4 | 5 | 5 | 2 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 3 |
| 147 | Jasminey | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 1 | 4 | 3 | 3 | 5 | 5 | 5 | 4 | 4 | 1 | 4 | 5 |
| 148 | Leonardo | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 3 | 3 | 5 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 3 |
| 149 | Robinson | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 2 | 4 | 4 | 5 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 2 |
| 150 | Williamson | 4 | 4 | 3 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 3 | 4 |
| 151 | Rhoida | 4 | 5 | 4 | 3 | 5 | 4 | 3 | 3 | 5 | 3 | 4 | 3 | 5 | 5 | 3 | 4 | 5 | 5 | 4 | 3 |
| 152 | Prudence | 5 | 4 | 5 | 4 | 5 | 4 | 3 | 2 | 4 | 4 | 4 | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 3 |
| 153 | John | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 2 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 2 | 5 | 4 |
| 154 | Dec | 5 | 3 | 4 | 4 | 5 | 5 | 4 | 1 | 4 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 3 |
| 155 | Tricia | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 2 | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 3 |
| 156 | Ben | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 |
| 157 | Jonathan | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 2 | 2 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 2 | 5 | 2 |
| 158 | Jacob | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 2 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 3 |
| 159 | William | 5 | 5 | 4 | 4 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 |
| 160 | Pickford | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 1 |
| 161 | Bradley | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 3 |
| 162 | Jimmy | 5 | 4 | 5 | 5 | 5 | 5 | 3 | 3 | 4 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 3 |
| 163 | Adam | 5 | 5 | 4 | 4 | 5 | 1 | 2 | 2 | 4 | 5 | 4 | 3 | 5 | 5 | 4 | 1 | 5 | 4 | 4 | 5 |
| 164 | Jordan C | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 |
| 165 | Paul | 5 | 5 | 5 | 4 | 4 | 5 | 3 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 |
| 166 | Penfold | 4 | 5 | 4 | 3 | 5 | 5 | 4 | 4 | 5 | 3 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 4 |
| 167 | Campbell | 4 | 5 | 4 | 4 | 5 | 4 | 3 | 3 | 4 | 1 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 3 |
| 168 | George | 5 | 4 | 5 | 3 | 5 | 5 | 3 | 4 | 5 | 4 | 3 | 5 | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 4 |
| 169 | Jean | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 |
| 170 | Joy | 5 | 5 | 4 | 3 | 5 | 3 | 3 | 3 | 5 | 3 | 5 | 3 | 5 | 5 | 3 | 3 | 5 | 5 | 4 | 3 |
| 171 | Pacimol | 4 | 4 | 4 | 3 | 5 | 4 | 4 | 2 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 |
| 172 | Carla | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 3 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 3 | 5 | 4 |
| 173 | Banfield | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 3 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 3 |
| 174 | Harry | 5 | 5 | 5 | 4 | 5 | 5 | 2 | 1 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 |
| 175 | Levy | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 |
| 176 | Hannah | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 5 |
| 177 | Appleton | 4 | 5 | 5 | 4 | 5 | 1 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 5 | 5 | 4 |
| 178 | Jammie | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 |
| 179 | Joyeya | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 |
| 180 | Charles | 5 | 5 | 3 | 4 | 5 | 5 | 4 | 3 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 3 | 3 |
| 181 | Sylvia | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 1 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 |
| 182 | Wellington | 4 | 5 | 5 | 3 | 5 | 4 | 4 | 4 | 5 | 3 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 |
| 183 | Rianne | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 3 | 4 | 4 | 4 | 4 | 4 |
| 184 | Levy | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 1 | 3 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 3 |
| 185 | Oliver | 4 | 4 | 3 | 3 | 5 | 5 | 3 | 3 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 5 | 3 |
| 186 | Stephen | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 2 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 |
| 187 | Jasmin | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 3 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 3 | 5 | 4 |

| Count | Q1F/name only | Q11 VaDiC1 | VaDiC2 | VaDiC3 | VaDiC4 | VaDiC5 | VaDiC6 | VaDiC7 | VaDiC8 | VaDiC9 | VaDiC10 | VaDiC11 | VaDiC12 | Q12 Exfacirc1 | Exfacirc2 | Exfacirc3 | Exfacirc4 | Exfacirc5 | Exfacirc6 | Exfacirc7 | Exfacirc8 |
|-------|---------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 188 | Campbell | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 3 | 4 | 5 | 5 | 3 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 3 |
| 189 | Adam | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 |
| 190 | Louise | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 |
| 191 | Anthony | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 3 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 3 |
| 192 | Jeffrey | 5 | 4 | 5 | 5 | 5 | 5 | 2 | 3 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 |
| 193 | Jessy | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 3 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 3 | 5 | 4 |
| 194 | Bill | 4 | 5 | 4 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 4 |
| 195 | Trish | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 1 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 3 |
| 196 | Lemmy | 5 | 5 | 4 | 4 | 4 | 5 | 2 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 |
| 197 | Jimmy | 4 | 2 | 5 | 4 | 5 | 5 | 3 | 1 | 5 | 5 | 4 | 5 | 5 | 4 | 2 | 5 | 3 | 5 | 5 | 3 |
| 198 | Katie | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 |
| 199 | Barlet | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 3 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 3 |
| 200 | Hendrix | 5 | 4 | 3 | 5 | 5 | 3 | 3 | 1 | 5 | 4 | 3 | 3 | 5 | 5 | 5 | 3 | 4 | 5 | 3 | 3 |
| 201 | Campbell | 2 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 2 | 4 | 5 | 5 | 4 | 5 | 4 |
| 202 | Jayame | 4 | 3 | 3 | 4 | 5 | 4 | 3 | 3 | 4 | 5 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 3 | 3 |
| 203 | Nicola | 5 | 1 | 5 | 5 | 5 | 5 | 4 | 2 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 1 | 5 | 5 | 2 |
| 204 | Davinnah | 5 | 4 | 3 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 3 | 4 |
| 205 | Garry | 5 | 2 | 5 | 4 | 5 | 4 | 4 | 3 | 5 | 3 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 3 |
| 206 | Stewart | 5 | 4 | 5 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 |
| 207 | Kathyrene | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 3 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 3 |
| 208 | Margarette | 5 | 2 | 3 | 5 | 5 | 4 | 4 | 3 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 3 | 3 |
| 209 | Jesy | 5 | 3 | 5 | 3 | 4 | 5 | 3 | 1 | 5 | 4 | 4 | 2 | 5 | 5 | 3 | 5 | 3 | 5 | 5 | 3 |
| 210 | Jack | 5 | 5 | 5 | 4 | 5 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 3 |
| 211 | Mervin | 4 | 1 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 5 | 4 |
| 212 | Adam | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 4 | 3 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 |
| 213 | Stefan | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 1 | 3 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 3 | 4 | 4 |
| 214 | Max | 5 | 1 | 5 | 5 | 5 | 5 | 4 | 2 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 1 | 4 | 5 | 2 |
| 215 | Jassida | 4 | 3 | 5 | 4 | 5 | 4 | 5 | 1 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 3 | 5 | 5 | 3 |
| 216 | Mapela | 5 | 4 | 4 | 3 | 5 | 5 | 3 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 3 | 5 | 4 | 4 | 4 | 4 |
| 217 | Yaluma | 5 | 4 | 3 | 5 | 3 | 4 | 3 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 3 | 4 |
| 218 | Posson | 5 | 1 | 5 | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 3 | 4 | 5 | 3 | 4 | 5 | 4 |
| 219 | Jermine | 5 | 4 | 5 | 5 | 4 | 4 | 3 | 1 | 4 | 4 | 3 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 2 |
| 220 | Hamza | 5 | 5 | 4 | 5 | 5 | 5 | 3 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 |
| 221 | Jef | 5 | 4 | 5 | 3 | 5 | 2 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 3 | 2 | 4 | 4 | 5 | 4 |
| 222 | Bobby | 4 | 1 | 4 | 4 | 5 | 4 | 3 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 3 | 5 | 5 | 4 |
| 223 | Goerge | 5 | 4 | 5 | 5 | 5 | 5 | 3 | 1 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 2 |
| 224 | Seal | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 1 | 5 | 4 |
| 225 | Liam | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 3 | 5 | 3 |
| 226 | Jones | 5 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 3 | 5 | 4 | 4 |
| 227 | Pedro | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 2 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 2 | 5 | 4 |
| 228 | Theobald | 5 | 1 | 5 | 3 | 5 | 4 | 5 | 3 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 3 | 5 | 5 | 3 |
| 229 | Ash | 4 | 3 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 |
| 230 | Doninke | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 2 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 |
| 231 | Jonathan | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 2 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 5 |
| 232 | Connor | 4 | 4 | 5 | 4 | 5 | 5 | 3 | 2 | 4 | 3 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 1 |
| 233 | Tom | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 3 | 4 | 4 | 4 | 5 | 4 |
| 234 | Hussain | 5 | 2 | 4 | 5 | 5 | 3 | 5 | 3 | 2 | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 5 | 3 | 5 | 4 |

| Count | Q1F/name only | Q13 Priareic1 | Priareic2 | Priareic3 | Priareic4 | Priareic5 | Priareic6 | Priareic7 | Priareic8 | Priareic9 | Priareic10 | Priareic11 | Priareic12 |
|-------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| 1 | George | 4 | 4 | 2 | 1 | 3 | 5 | 5 | 1 | 5 | 5 | 5 | 3 |
| 2 | Emmanuel | 4 | 5 | 0 | 3 | 5 | 1 | 4 | 5 | 3 | 5 | 1 | 4 |
| 3 | Andy | 5 | 4 | 5 | 1 | 4 | 5 | 5 | 1 | 4 | 5 | 5 | 3 |
| 4 | James | 4 | 3 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 |
| 5 | Steve | 5 | 5 | 5 | 1 | 5 | 5 | 3 | 1 | 4 | 5 | 5 | 4 |
| 6 | Peter | 4 | 5 | 2 | 3 | 5 | 4 | 5 | 4 | 3 | 5 | 4 | 4 |
| 7 | Arthur | 5 | 5 | 5 | 1 | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 5 |
| 8 | Catherine | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 |
| 9 | Olami | 5 | 4 | 5 | 2 | 5 | 3 | 5 | 5 | 3 | 5 | 3 | 3 |
| 10 | John | 4 | 5 | 5 | 1 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 4 |
| 11 | Pete | 3 | 5 | 1 | 2 | 5 | 4 | 4 | 2 | 5 | 5 | 5 | 2 |
| 12 | Rakhman | 5 | 3 | 5 | 5 | 4 | 5 | 5 | 5 | 3 | 5 | 5 | 5 |
| 13 | Andrew | 3 | 5 | 2 | 2 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 3 |
| 14 | Webster | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 |
| 15 | Justine | 5 | 4 | 4 | 1 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 3 |
| 16 | Theresa | 5 | 5 | 5 | 3 | 5 | 1 | 5 | 5 | 3 | 5 | 1 | 5 |
| 17 | Patel | 4 | 5 | 5 | 3 | 5 | 5 | 4 | 2 | 4 | 5 | 5 | 4 |
| 18 | Simon | 5 | 4 | 5 | 2 | 5 | 4 | 5 | 5 | 3 | 5 | 4 | 5 |
| 19 | Abdul | 4 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 20 | Scot | 4 | 5 | 3 | 3 | 4 | 5 | 5 | 1 | 5 | 5 | 5 | 4 |
| 21 | Radcliffe | 5 | 5 | 2 | 2 | 5 | 4 | 5 | 4 | 2 | 5 | 5 | 3 |
| 22 | Anderson | 4 | 5 | 5 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 5 |
| 23 | Kim | 3 | 4 | 5 | 2 | 5 | 5 | 5 | 2 | 4 | 5 | 5 | 5 |
| 24 | Jenny | 5 | 3 | 2 | 3 | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 4 |
| 25 | Provin | 5 | 5 | 2 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 |
| 26 | Edward | 3 | 4 | 5 | 3 | 5 | 5 | 5 | 3 | 4 | 5 | 5 | 5 |
| 27 | Lee | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 3 |
| 28 | Rachael | 4 | 5 | 1 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 |
| 29 | Andre | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 |
| 30 | Gallimore | 4 | 5 | 5 | 4 | 3 | 4 | 5 | 4 | 3 | 5 | 4 | 3 |
| 31 | Amoah | 5 | 5 | 5 | 3 | 4 | 5 | 5 | 5 | 2 | 5 | 5 | 5 |
| 32 | Michale | 3 | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 |
| 33 | Bonner | 4 | 4 | 5 | 2 | 5 | 5 | 5 | 4 | 3 | 5 | 5 | 5 |
| 34 | Ahmed | 4 | 3 | 5 | 3 | 5 | 4 | 2 | 5 | 3 | 5 | 4 | 3 |
| 35 | Mathews | 5 | 5 | 5 | 1 | 4 | 5 | 5 | 1 | 5 | 5 | 5 | 4 |
| 36 | Benjamin | 5 | 5 | 5 | 3 | 2 | 5 | 4 | 4 | 3 | 5 | 5 | 5 |
| 37 | Elton | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 5 |
| 38 | Jai | 3 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 5 |
| 39 | Rob | 5 | 3 | 2 | 1 | 4 | 3 | 5 | 1 | 2 | 5 | 3 | 5 |
| 40 | Lengeni | 4 | 5 | 5 | 1 | 2 | 5 | 2 | 1 | 3 | 5 | 5 | 5 |
| 41 | David | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 5 | 5 | 4 | 3 |
| 42 | Rosemary | 5 | 3 | 5 | 1 | 1 | 5 | 5 | 1 | 1 | 5 | 5 | 5 |
| 43 | Lilly | 4 | 5 | 3 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 3 |
| 44 | Rastam | 5 | 4 | 5 | 2 | 2 | 4 | 3 | 5 | 3 | 5 | 4 | 5 |
| 45 | Mohammed | 5 | 2 | 5 | 2 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 |
| 46 | Heywood | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 3 | 5 | 4 | 3 |
| 47 | Julian | 2 | 5 | 5 | 4 | 5 | 4 | 4 | 1 | 5 | 5 | 4 | 4 |

| Count | Q1F/name only | Q13 Priareic1 | Priareic2 | Priareic3 | Priareic4 | Priareic5 | Priareic6 | Priareic7 | Priareic8 | Priareic9 | Priareic10 | Priareic11 | Priareic12 |
|-------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| 48 | Tansey | 5 | 1 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 |
| 49 | Leonard | 4 | 5 | 4 | 2 | 5 | 3 | 5 | 2 | 3 | 5 | 5 | 3 |
| 50 | Omino | 5 | 1 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 |
| 51 | Samatha | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| 52 | Ousama | 3 | 2 | 4 | 2 | 4 | 4 | 5 | 4 | 3 | 5 | 4 | 5 |
| 53 | Charlotte | 4 | 5 | 5 | 4 | 3 | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| 54 | Mark | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 |
| 55 | Ayoola | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 3 | 5 | 5 | 5 |
| 56 | Musama | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 4 |
| 57 | Sean | 3 | 4 | 5 | 5 | 1 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| 58 | Chris | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 |
| 59 | Tshole | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 |
| 60 | Luke | 4 | 4 | 4 | 2 | 4 | 2 | 5 | 4 | 4 | 5 | 2 | 4 |
| 61 | Olivia | 5 | 3 | 5 | 4 | 1 | 4 | 4 | 2 | 5 | 5 | 4 | 4 |
| 62 | Lamont | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 5 | 4 |
| 63 | Brandina | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 3 |
| 64 | Abass | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 |
| 65 | Anabella | 5 | 4 | 5 | 3 | 3 | 4 | 5 | 2 | 4 | 5 | 4 | 4 |
| 66 | Edgar | 5 | 4 | 5 | 3 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 |
| 67 | Anvil | 5 | 4 | 5 | 5 | 1 | 4 | 5 | 3 | 3 | 5 | 4 | 3 |
| 68 | Juliana | 4 | 5 | 5 | 3 | 3 | 5 | 4 | 1 | 4 | 5 | 5 | 4 |
| 69 | Mitchel | 5 | 4 | 4 | 1 | 4 | 4 | 5 | 1 | 4 | 5 | 4 | 4 |
| 70 | Galloria | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 4 | 5 |
| 71 | Mulenja | 4 | 4 | 5 | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 3 |
| 72 | Naomi | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 5 |
| 73 | Michael | 5 | 3 | 5 | 3 | 2 | 3 | 5 | 1 | 3 | 4 | 3 | 4 |
| 74 | Beatrice | 5 | 5 | 5 | 4 | 4 | 3 | 4 | 4 | 3 | 5 | 3 | 5 |
| 75 | Boneyaer | 4 | 4 | 5 | 2 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 4 |
| 76 | Leniard | 4 | 5 | 5 | 3 | 4 | 3 | 5 | 1 | 5 | 5 | 3 | 5 |
| 77 | Dennis | 5 | 4 | 5 | 4 | 2 | 4 | 5 | 4 | 3 | 5 | 4 | 5 |
| 78 | Pete | 5 | 4 | 5 | 2 | 4 | 5 | 5 | 2 | 4 | 5 | 5 | 3 |
| 79 | Simon | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 4 | 3 | 5 | 3 | 5 |
| 80 | Sadia | 4 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 4 | 5 | 3 | 4 |
| 81 | Maybin | 5 | 5 | 5 | 4 | 4 | 3 | 0 | 4 | 5 | 5 | 3 | 3 |
| 82 | Marvin | 5 | 4 | 5 | 3 | 4 | 5 | 3 | 2 | 3 | 5 | 5 | 5 |
| 83 | Sharpe | 5 | 3 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 |
| 84 | Kimonna | 5 | 5 | 5 | 4 | 4 | 3 | 3 | 4 | 3 | 5 | 3 | 3 |
| 85 | Jenny | 5 | 5 | 5 | 2 | 5 | 5 | 0 | 4 | 2 | 5 | 5 | 5 |
| 86 | Christopher | 4 | 5 | 5 | 3 | 4 | 2 | 5 | 4 | 5 | 5 | 2 | 3 |
| 87 | Godfridah | 5 | 3 | 5 | 4 | 5 | 3 | 5 | 4 | 3 | 5 | 3 | 5 |
| 88 | Tisholeni | 4 | 5 | 5 | 5 | 4 | 4 | 0 | 5 | 4 | 5 | 4 | 3 |
| 89 | Josef | 4 | 2 | 5 | 1 | 5 | 5 | 5 | 1 | 3 | 5 | 5 | 3 |
| 90 | Kuyela | 5 | 3 | 4 | 3 | 4 | 4 | 1 | 3 | 3 | 5 | 4 | 4 |
| 91 | Raheim | 4 | 5 | 5 | 4 | 3 | 5 | 3 | 4 | 3 | 5 | 5 | 5 |
| 92 | Phillips | 5 | 4 | 5 | 5 | 5 | 4 | 3 | 5 | 5 | 5 | 4 | 5 |
| 93 | Dickson | 5 | 5 | 4 | 3 | 3 | 3 | 2 | 5 | 4 | 5 | 3 | 2 |
| 94 | Robertson | 5 | 2 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 3 |

| Count | Q1F/name only | Q13 Priareic1 | Priareic2 | Priareic3 | Priareic4 | Priareic5 | Priareic6 | Priareic7 | Priareic8 | Priareic9 | Priareic10 | Priareic11 | Priareic12 |
|-------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| 95 | Mohammed T | 4 | 3 | 5 | 5 | 5 | 4 | 2 | 5 | 4 | 5 | 4 | 5 |
| 96 | Pete | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| 97 | Jennifer | 5 | 3 | 5 | 3 | 4 | 5 | 5 | 3 | 3 | 5 | 5 | 5 |
| 98 | Emily | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 |
| 99 | Senjamie | 5 | 4 | 5 | 3 | 4 | 5 | 3 | 4 | 4 | 5 | 5 | 4 |
| 100 | Mitchel B | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 5 |
| 101 | Georgina | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 2 | 5 | 5 | 5 |
| 102 | Barcena | 4 | 1 | 5 | 2 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 2 |
| 103 | Samatha | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 5 | 4 |
| 104 | Olapi | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 3 |
| 105 | enJay | 4 | 5 | 5 | 2 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 |
| 106 | Christein | 5 | 4 | 2 | 5 | 3 | 5 | 3 | 5 | 5 | 5 | 5 | 2 |
| 107 | Mica | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 3 |
| 108 | Salem | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 3 |
| 109 | Josephine | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 |
| 110 | Andrew B | 4 | 3 | 4 | 1 | 4 | 3 | 5 | 5 | 3 | 5 | 3 | 5 |
| 111 | Evans | 5 | 2 | 5 | 2 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 0 |
| 112 | Olivia F | 4 | 1 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| 113 | Timothy | 3 | 3 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 2 |
| 114 | Angela | 4 | 4 | 5 | 3 | 4 | 5 | 4 | 5 | 1 | 5 | 5 | 5 |
| 115 | Euphraim | 5 | 4 | 5 | 5 | 5 | 3 | 3 | 4 | 4 | 5 | 3 | 5 |
| 116 | Harvey | 5 | 5 | 5 | 3 | 5 | 2 | 4 | 3 | 5 | 5 | 2 | 4 |
| 117 | Jorren | 5 | 4 | 5 | 4 | 4 | 5 | 3 | 5 | 4 | 5 | 5 | 4 |
| 118 | William | 4 | 5 | 5 | 2 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 |
| 119 | Priscilla | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 5 |
| 120 | Nathan | 5 | 5 | 5 | 3 | 4 | 2 | 5 | 4 | 3 | 5 | 2 | 2 |
| 121 | Jeancy | 4 | 4 | 4 | 4 | 5 | 3 | 3 | 4 | 4 | 5 | 3 | 4 |
| 122 | Campbell | 5 | 3 | 5 | 2 | 5 | 1 | 4 | 5 | 4 | 5 | 1 | 5 |
| 123 | Ahmed | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 2 | 5 | 4 | 4 |
| 124 | Jean | 4 | 3 | 5 | 5 | 5 | 2 | 4 | 3 | 3 | 5 | 2 | 3 |
| 125 | Angeline | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 2 |
| 126 | Charles | 4 | 4 | 5 | 3 | 4 | 4 | 4 | 5 | 3 | 5 | 4 | 5 |
| 127 | Patricia | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 3 |
| 128 | Martin | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 4 | 5 | 3 | 3 |
| 129 | Emelia | 3 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 5 |
| 130 | Felix | 4 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 3 |
| 131 | Julieta | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 |
| 132 | Paul | 4 | 2 | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 4 | 2 |
| 133 | Levy | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 1 | 5 |
| 134 | Murray | 4 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 2 | 5 | 5 | 3 |
| 135 | Ethel | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 4 |
| 136 | Herbert | 4 | 3 | 4 | 5 | 4 | 5 | 4 | 3 | 3 | 5 | 5 | 3 |
| 137 | William | 5 | 5 | 5 | 5 | 3 | 1 | 5 | 5 | 5 | 5 | 1 | 5 |
| 138 | Jeffrey | 4 | 4 | 5 | 4 | 4 | 4 | 3 | 4 | 3 | 5 | 4 | 5 |
| 139 | Jean | 5 | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 |
| 140 | Wilson | 4 | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 4 | 5 | 4 | 2 |

| Count | Q1F/name only | Q13 Priareic1 | Priareic2 | Priareic3 | Priareic4 | Priareic5 | Priareic6 | Priareic7 | Priareic8 | Priareic9 | Priareic10 | Priareic11 | Priareic12 |
|-------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| 141 | Sarafina | 4 | 4 | 4 | 4 | 5 | 1 | 5 | 4 | 5 | 5 | 1 | 4 |
| 142 | Joyceline | 5 | 3 | 5 | 5 | 4 | 4 | 2 | 5 | 5 | 5 | 4 | 5 |
| 143 | Tonny | 4 | 5 | 5 | 5 | 5 | 5 | 2 | 5 | 4 | 5 | 5 | 5 |
| 144 | Japhet | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 5 | 3 | 5 | 5 | 4 |
| 145 | Paul | 4 | 4 | 5 | 5 | 5 | 3 | 3 | 4 | 5 | 5 | 3 | 5 |
| 146 | Levy | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 5 | 3 |
| 147 | Jasminey | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 2 | 5 |
| 148 | Leonardo | 5 | 3 | 5 | 3 | 4 | 3 | 5 | 5 | 5 | 5 | 3 | 3 |
| 149 | Robinson | 4 | 2 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 2 |
| 150 | Williamson | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 5 | 4 |
| 151 | Rhoida | 5 | 3 | 5 | 4 | 4 | 5 | 4 | 3 | 5 | 5 | 5 | 3 |
| 152 | Prudence | 4 | 3 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 3 |
| 153 | John | 5 | 4 | 2 | 4 | 5 | 2 | 5 | 4 | 3 | 5 | 2 | 5 |
| 154 | Dec | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 3 | 5 | 5 | 4 | 3 |
| 155 | Tricia | 5 | 3 | 4 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 3 |
| 156 | Ben | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 |
| 157 | Jonathan | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 2 | 3 | 5 | 2 | 2 |
| 158 | Jacob | 5 | 3 | 5 | 3 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 3 |
| 159 | William | 5 | 5 | 2 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| 160 | Pickford | 4 | 1 | 4 | 4 | 4 | 5 | 5 | 1 | 5 | 5 | 5 | 1 |
| 161 | Bradley | 5 | 5 | 5 | 4 | 5 | 3 | 3 | 5 | 5 | 5 | 3 | 5 |
| 162 | Jimmy | 4 | 3 | 5 | 3 | 5 | 4 | 5 | 1 | 5 | 5 | 4 | 3 |
| 163 | Adam | 5 | 5 | 2 | 5 | 1 | 4 | 5 | 5 | 5 | 5 | 4 | 5 |
| 164 | Jordan C | 4 | 3 | 5 | 4 | 5 | 5 | 5 | 2 | 3 | 5 | 5 | 3 |
| 165 | Paul | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 |
| 166 | Penfold | 5 | 4 | 2 | 4 | 5 | 5 | 4 | 4 | 3 | 5 | 5 | 4 |
| 167 | Campbell | 5 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 3 |
| 168 | George | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 |
| 169 | Jean | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 3 | 5 | 5 | 5 |
| 170 | Joy | 5 | 3 | 5 | 4 | 3 | 5 | 4 | 5 | 4 | 5 | 5 | 3 |
| 171 | Pacimol | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 |
| 172 | Carla | 5 | 4 | 2 | 4 | 4 | 3 | 5 | 4 | 3 | 5 | 3 | 4 |
| 173 | Banfield | 4 | 5 | 5 | 3 | 5 | 5 | 3 | 3 | 5 | 5 | 5 | 3 |
| 174 | Harry | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 |
| 175 | Levy | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 |
| 176 | Hannah | 4 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 5 |
| 177 | Appleton | 5 | 4 | 4 | 5 | 1 | 5 | 5 | 4 | 4 | 5 | 5 | 4 |
| 178 | Jammie | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 |
| 179 | Joyeya | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 |
| 180 | Charles | 5 | 5 | 4 | 3 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 3 |
| 181 | Sylvia | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 |
| 182 | Wellington | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| 183 | Rianne | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 |
| 184 | Levy | 5 | 3 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 |
| 185 | Oliver | 4 | 5 | 3 | 3 | 5 | 5 | 5 | 3 | 4 | 5 | 5 | 3 |
| 186 | Stephen | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 5 | 5 | 4 |
| 187 | Jasmin | 4 | 4 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 4 | 4 |

| Count | Q1F/name only | Q13 Priareic1 | Priareic2 | Priareic3 | Priareic4 | Priareic5 | Priareic6 | Priareic7 | Priareic8 | Priareic9 | Priareic10 | Priareic11 | Priareic12 |
|-------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| 188 | Campbell | 5 | 3 | 5 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 3 |
| 189 | Adam | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 5 |
| 190 | Louise | 5 | 4 | 5 | 4 | 4 | 4 | 3 | 4 | 3 | 5 | 5 | 4 |
| 191 | Anthony | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 3 |
| 192 | Jeffrey | 4 | 3 | 5 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 |
| 193 | Jessy | 5 | 5 | 2 | 4 | 4 | 3 | 5 | 5 | 5 | 5 | 4 | 4 |
| 194 | Bill | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 3 | 5 | 4 | 5 |
| 195 | Trish | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 3 | 5 | 5 | 4 | 3 |
| 196 | Lemmy | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 |
| 197 | Jimmy | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 3 |
| 198 | Katie | 5 | 4 | 1 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 |
| 199 | Barlet | 5 | 3 | 5 | 5 | 4 | 3 | 5 | 3 | 1 | 5 | 3 | 5 |
| 200 | Hendrix | 4 | 5 | 0 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 3 |
| 201 | Campbell | 5 | 4 | 2 | 4 | 5 | 4 | 4 | 3 | 3 | 5 | 4 | 4 |
| 202 | Jayame | 4 | 3 | 5 | 5 | 4 | 4 | 5 | 3 | 1 | 5 | 5 | 3 |
| 203 | Nicola | 3 | 2 | 5 | 5 | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 2 |
| 204 | Davinnah | 4 | 5 | 0 | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 5 | 5 |
| 205 | Garry | 5 | 3 | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 3 |
| 206 | Stewart | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 2 | 0 | 5 | 5 | 4 |
| 207 | Kathyrene | 5 | 3 | 0 | 5 | 5 | 4 | 5 | 3 | 3 | 5 | 4 | 3 |
| 208 | Margarette | 3 | 5 | 5 | 3 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 3 |
| 209 | Jesy | 3 | 3 | 0 | 5 | 5 | 5 | 5 | 3 | 3 | 5 | 5 | 3 |
| 210 | Jack | 5 | 3 | 1 | 3 | 5 | 4 | 5 | 4 | 0 | 5 | 4 | 5 |
| 211 | Mervin | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 3 | 5 | 5 | 4 |
| 212 | Adam | 4 | 4 | 2 | 4 | 5 | 4 | 5 | 5 | 3 | 5 | 4 | 4 |
| 213 | Stefan | 4 | 5 | 5 | 5 | 4 | 1 | 5 | 4 | 4 | 5 | 3 | 4 |
| 214 | Max | 1 | 2 | 2 | 2 | 5 | 4 | 4 | 0 | 1 | 5 | 4 | 5 |
| 215 | Jassida | 3 | 3 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 3 |
| 216 | Mapela | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 2 | 5 | 4 | 5 |
| 217 | Yaluma | 4 | 5 | 2 | 4 | 4 | 4 | 4 | 5 | 3 | 4 | 5 | 4 |
| 218 | Posson | 3 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 4 |
| 219 | Jermine | 4 | 2 | 5 | 2 | 4 | 0 | 5 | 5 | 2 | 4 | 4 | 2 |
| 220 | Hamza | 5 | 4 | 2 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 |
| 221 | Jef | 4 | 4 | 4 | 5 | 2 | 4 | 4 | 4 | 3 | 5 | 4 | 4 |
| 222 | Bobby | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 3 | 5 | 5 | 5 | 4 |
| 223 | Goerge | 4 | 2 | 5 | 5 | 5 | 4 | 5 | 2 | 2 | 5 | 4 | 5 |
| 224 | Seal | 4 | 5 | 5 | 1 | 4 | 1 | 4 | 0 | 3 | 5 | 5 | 5 |
| 225 | Liam | 5 | 3 | 3 | 3 | 5 | 3 | 5 | 3 | 2 | 5 | 3 | 5 |
| 226 | Jones | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 4 |
| 227 | Pedro | 5 | 4 | 5 | 0 | 5 | 5 | 5 | 4 | 2 | 5 | 2 | 4 |
| 228 | Theobald | 3 | 3 | 5 | 3 | 4 | 5 | 5 | 5 | 0 | 5 | 5 | 3 |
| 229 | Ash | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 4 |
| 230 | Doninke | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 2 | 5 | 5 | 5 |
| 231 | Jonathan | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 3 | 5 | 4 | 5 |
| 232 | Connor | 4 | 0 | 4 | 1 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 1 |
| 233 | Tom | 4 | 3 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 4 |
| 234 | Hussain | 5 | 4 | 4 | 0 | 1 | 3 | 1 | 4 | 4 | 5 | 3 | 5 |

| Count | Q1F/name only | Q13 Priareic1 | Priareic2 | Priareic3 | Priareic4 | Priareic5 | Priareic6 | Priareic7 | Priareic8 | Priareic9 | Priareic10 | Priareic11 | Priareic12 |
|-------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| 235 | Lordin | 4 | 5 | 4 | 4 | 3 | 3 | 5 | 3 | 3 | 5 | 5 | 4 |
| 236 | Young | 4 | 2 | 3 | 2 | 5 | 4 | 5 | 3 | 5 | 3 | 4 | 4 |
| 237 | Jake | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 5 | 5 | 3 | 4 |
| 238 | Hassan | 2 | 5 | 4 | 2 | 4 | 2 | 5 | 4 | 3 | 4 | 5 | 3 |
| 239 | Litmore | 4 | 4 | 5 | 4 | 5 | 3 | 4 | 4 | 4 | 5 | 5 | 4 |
| 240 | Roberto | 5 | 3 | 4 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 |
| 241 | Harley | 3 | 2 | 4 | 4 | 2 | 4 | 3 | 5 | 3 | 5 | 1 | 2 |

APPENDIX 8

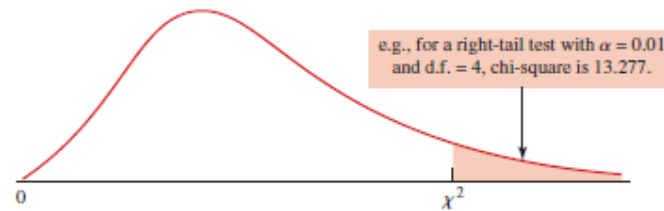
Critical Values of Spearman's Rank Correlation Coefficient, r_s , One-Tail Test. (For a two-tail test, the listed values correspond to the 2α level of significance.)

| n | $\alpha = 0.05$ | $\alpha = 0.025$ | $\alpha = 0.01$ | $\alpha = 0.005$ |
|-----|-----------------|------------------|-----------------|------------------|
| 5 | 0.900 | — | — | — |
| 6 | 0.829 | 0.886 | 0.943 | — |
| 7 | 0.714 | 0.786 | 0.893 | — |
| 8 | 0.643 | 0.738 | 0.833 | 0.881 |
| 9 | 0.600 | 0.683 | 0.783 | 0.833 |
| 10 | 0.564 | 0.648 | 0.745 | 0.794 |
| 11 | 0.523 | 0.623 | 0.736 | 0.818 |
| 12 | 0.497 | 0.591 | 0.703 | 0.780 |
| 13 | 0.475 | 0.566 | 0.673 | 0.745 |
| 14 | 0.457 | 0.545 | 0.646 | 0.716 |
| 15 | 0.441 | 0.525 | 0.623 | 0.689 |
| 16 | 0.425 | 0.507 | 0.601 | 0.666 |
| 17 | 0.412 | 0.490 | 0.582 | 0.645 |
| 18 | 0.399 | 0.476 | 0.564 | 0.625 |
| 19 | 0.388 | 0.462 | 0.549 | 0.608 |
| 20 | 0.377 | 0.450 | 0.534 | 0.591 |
| 21 | 0.368 | 0.438 | 0.521 | 0.576 |
| 22 | 0.359 | 0.428 | 0.508 | 0.562 |
| 23 | 0.351 | 0.418 | 0.496 | 0.549 |
| 24 | 0.343 | 0.409 | 0.485 | 0.537 |
| 25 | 0.336 | 0.400 | 0.475 | 0.526 |
| 26 | 0.329 | 0.392 | 0.465 | 0.515 |
| 27 | 0.323 | 0.385 | 0.456 | 0.505 |
| 28 | 0.317 | 0.377 | 0.448 | 0.496 |
| 29 | 0.311 | 0.370 | 0.440 | 0.487 |
| 30 | 0.305 | 0.364 | 0.432 | 0.478 |

APPENDIX 9

Critical value for Chi-square distribution for Kruskal-Wallis statistic

The Chi-Square Distribution



For α = Right-Tail Area of

| d.f. | 0.99 | 0.975 | 0.95 | 0.90 | 0.10 | 0.05 | 0.025 | 0.01 |
|------|---------|---------|---------|--------|--------|--------|--------|--------|
| 1 | 0.00016 | 0.00098 | 0.00039 | 0.0158 | 2.706 | 3.841 | 5.024 | 6.635 |
| 2 | 0.0201 | 0.0506 | 0.103 | 0.211 | 4.605 | 5.991 | 7.378 | 9.210 |
| 3 | 0.115 | 0.216 | 0.352 | 0.584 | 6.251 | 7.815 | 9.348 | 11.345 |
| 4 | 0.297 | 0.484 | 0.711 | 1.064 | 7.779 | 9.488 | 11.143 | 13.277 |
| 5 | 0.554 | 0.831 | 1.145 | 1.610 | 9.236 | 11.070 | 12.833 | 15.086 |
| 6 | 0.872 | 1.237 | 1.635 | 2.204 | 10.645 | 12.592 | 14.449 | 16.812 |
| 7 | 1.239 | 1.690 | 2.167 | 2.833 | 12.017 | 14.067 | 16.013 | 18.475 |
| 8 | 1.646 | 2.180 | 2.733 | 3.490 | 13.362 | 15.507 | 17.535 | 20.090 |
| 9 | 2.088 | 2.700 | 3.325 | 4.168 | 14.684 | 16.919 | 19.023 | 21.666 |
| 10 | 2.558 | 3.247 | 3.940 | 4.865 | 15.987 | 18.307 | 20.483 | 23.209 |
| 11 | 3.053 | 3.816 | 4.575 | 5.578 | 17.275 | 19.675 | 21.920 | 24.725 |
| 12 | 3.571 | 4.404 | 5.226 | 6.304 | 18.549 | 21.026 | 23.337 | 26.217 |
| 13 | 4.107 | 5.009 | 5.892 | 7.042 | 19.812 | 22.362 | 24.736 | 27.688 |
| 14 | 4.660 | 5.629 | 6.571 | 7.790 | 21.064 | 23.685 | 26.119 | 29.141 |
| 15 | 5.229 | 6.262 | 7.261 | 8.547 | 22.307 | 24.996 | 27.488 | 30.578 |
| 16 | 5.812 | 6.908 | 7.962 | 9.312 | 23.542 | 26.296 | 28.845 | 32.000 |
| 17 | 6.408 | 7.564 | 8.672 | 10.085 | 24.769 | 27.587 | 30.191 | 33.409 |
| 18 | 7.015 | 8.231 | 9.390 | 10.865 | 25.989 | 28.869 | 31.526 | 34.805 |
| 19 | 7.633 | 8.907 | 10.117 | 11.651 | 27.204 | 30.144 | 32.852 | 36.191 |
| 20 | 8.260 | 9.591 | 10.851 | 12.443 | 28.412 | 31.410 | 34.170 | 37.566 |
| 21 | 8.897 | 10.283 | 11.591 | 13.240 | 29.615 | 32.671 | 35.479 | 38.932 |
| 22 | 9.542 | 10.982 | 12.338 | 14.042 | 30.813 | 33.924 | 36.781 | 40.290 |
| 23 | 10.196 | 11.689 | 13.091 | 14.848 | 32.007 | 35.172 | 38.076 | 41.638 |
| 24 | 10.856 | 12.401 | 13.848 | 15.659 | 33.196 | 36.415 | 39.364 | 42.980 |
| 25 | 11.524 | 13.120 | 14.611 | 16.473 | 34.382 | 37.652 | 40.647 | 44.314 |
| 26 | 12.198 | 13.844 | 15.379 | 17.292 | 35.563 | 38.885 | 41.923 | 45.642 |
| 27 | 12.879 | 14.573 | 16.151 | 18.114 | 36.741 | 40.113 | 43.195 | 46.963 |
| 28 | 13.565 | 15.308 | 16.928 | 18.939 | 37.916 | 41.337 | 44.461 | 48.278 |
| 29 | 14.256 | 16.047 | 17.708 | 19.768 | 39.087 | 42.557 | 45.722 | 49.588 |
| 30 | 14.953 | 16.791 | 18.493 | 20.599 | 40.256 | 43.773 | 46.979 | 50.892 |
| 40 | 22.164 | 24.433 | 26.509 | 29.051 | 51.805 | 55.759 | 59.342 | 63.691 |
| 50 | 29.707 | 32.357 | 34.764 | 37.689 | 63.167 | 67.505 | 71.420 | 76.154 |
| 60 | 37.485 | 40.482 | 43.188 | 46.459 | 74.397 | 79.082 | 83.298 | 88.381 |
| 70 | 45.442 | 48.758 | 51.739 | 55.329 | 85.527 | 90.531 | 95.023 | 100.42 |
| 80 | 53.540 | 57.153 | 60.391 | 64.278 | 96.578 | 101.88 | 106.63 | 112.33 |
| 90 | 61.754 | 65.647 | 69.126 | 73.291 | 107.57 | 113.15 | 118.14 | 124.12 |
| 100 | 70.065 | 74.222 | 77.930 | 82.358 | 118.50 | 124.34 | 129.56 | 135.81 |